

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

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No. 1.

THE INDUSTRIALIST.

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A. A. STEWART, Manhattan, Kansas.

Forage Plants in Kansas. No. 1.

BY PROF. E. M. SHELTON.

One of the hopeful signs in Kansas agriculture, is the wide spread interest lately awakened among our farmers in the subject of this article. The growth of grass is a branch of farming that there is little danger in overdoing, for the reason that it rarely exhausts the soil and nearly always is a positive benefit to succeeding crops. This is especially true of alfalfa and the clovers generally, and it is true of all grasses when pastured.

In the brief space of this article it will be impossible to discuss with any degree of thoroughness, even a few of the better known grasses. I only desire to throw out a few suggestive facts concerning the cultivation of forage plants that seem to promise especially well for Kansas.

ALFALFA, OR LUCERNE.

The success which has attended the cultivation of this plant in California, and in various South American countries, gives it a special promise for Kansas. The alfalfa, unlike its near relative the red clover, has a perennial root. The clover plant will last two years, some say three; the alfalfa, with decent treatment, will last ten or twelve years.

Neither in heavy clays nor light sand does the alfalfa flourish best; a mellow loam, or a permeable or even gravelly subsoil delights it most. The fact that the alfalfa sends its straight tap-root to such enormous depths, frequently thirteen feet, makes the question of the subsoil of the utmost importance. With an impervious hard-pan or quicksand subsoil, success can hardly be expected with this plant. The ground should be thoroughly prepared for the seed, and free from weed and grass seed. The alfalfa "stools" or tillers less than the clover, and hence requires a more liberal seeding. In California the rule is twenty pounds of clean seed per acre. We certainly should not sow less. Sow the seed at about the same time in the spring that oats and barley are usually sown. It may be seeded with either of these

crops, but does best when sown alone. The pure seed in California costs twenty cents per pound. It may be laid down in Kansas in lots of thirty pounds, at about thirty cents per pound.

TIMOTHY, OR HERDS GRASS,

is the most valuable contribution made by America to the agricultural grasses. Indeed it is the most valuable of all the grasses to cut for hay. For pasturage it possesses less value, being inferior to clover or blue grass.

Timothy promises to be of more than ordinary value to Kansas. Upon the College Farm we have twelve acres which passed through the terrible ordeal of last summer without the least injury. The great difficulty will be in getting the timothy started. Sow in the fall, early in September, upon land duly plowed and harrowed if possible. If not, sow upon stubble land at the rate of about eight quarts per acre. Then harrow thoroughly both ways and if the land is dry roll it, or, what is better, drive a herd of sheep or cattle over the land until it has been thoroughly trodden over. The advantage of sowing timothy in the fall is, that in case of failure, the seeding can be repeated in the spring.

Despite the protracted dry weather of last fall, we have a generally good stand upon seven acres, which was treated substantially as above; some patches that appeared as blanks we re-seeded late in March and have but little fear as to the result.

The Grasshopper.

BY PROF. J. S. WHITMAN.

THE hateful grasshopper (*Caloptenus spretus*) is hatching in considerable numbers on the south slope of the bluffs near the College. These are principally the offspring of such females as had defective wings, or whose wings became worn or lacerated in their flight. From observations made at the College, it seems that the females, on account of their larger bodies and greater weight, had suffered much more in this way than the males. Of fifty specimens taken on the 15th of September last, after the swarm had left, but three were males. The wings of two of these were slightly injured.

Coming from the elevated, gravelly and sandy plains of the West, the females, impelled by instinct, sought the high, gravelly knolls of our prairies as a nidus for their eggs; their offspring will reluctantly descend into the valleys as food may become scarce, but as they are wingless their march will be slow; and, born at a less elevation, and living under different atmospheric conditions, they will be much less vigorous than their ancestors; many will become infested with the parasites, common to our native species, and those that survive to develop their wings will scatter in flight, too degenerate to propagate their species. Thus will end this periodical scourge of Kansas. Beyond the destruction of limited grain patches on high prairies, and gardens at the foot of sandy hills, but little damage is apprehended in this part of the State.

Boiled Down.

Spring fever epidemic.

Fifty-five horse-flesh shops in Paris.

Chicago is to have a \$2,500,000 City Hall.

The Enterprise woolen mills will soon start.

More than enough flax seed for poultices this year.

Before July the Treasury will disburse \$74,000,000 gold.

Jefferson county reports a vein of coal two feet thick.

Large acreage of broom-corn planted in McPherson county.

Paola has a pump factory, and is to have a match factory.

One thousand cattle are on the trail from Texas to Wichita.

Last spring hay sold at Paola for \$18.00; this spring for \$5.00.

Boston apothecaries advertise their soaps as 'cheaper than dirt.'

Grand exhibition of live stock at the Centennial next year.

Since February 23d, the State Treasurer has paid out \$270,000.

Jersey Co., Ill., has 60,000 acres winter wheat in good condition.

To stop emigration, Prussia offers the crown lands in ten acre lots.

In spite of cold weather, Boston reports parsley soup-herb this year.

A Brooklyn fool ate two hundred and thirty-seven oysters at one sitting.

D. W. Wilder is preparing a political history or hand book of Kansas.

The sentinel who did not sleep on his watch had left it at the pawnbroker's.

N. W. Ingalls has shipped 5,000 merinos to his ranch in the Indian Territory.

Estimated that 65,000,000 bushels of wheat will be marketed within the next ninety days.

Indiana boasts of a Shorthorn calf, six months old, weighing six hundred and ninety pounds.

Kansas received eight thousand Mennonite and two thousand Negro immigrants during the winter.

A New York farmer has hay seventeen years old, as green and fresh as at the end of the first year.

E. P. Moulton, of Baxter Springs, has invented a combined plow, harrow, roller, and corn planter.

Of the 444,000 persons arrested in France for various crimes during three years 442,000 were illiterate.

Pittsburgh turns out the largest shears ever made; they weigh forty tons and cut five-inch cold iron.

A handkerchief of William Penn is to be on exhibition at the Centennial. It is the original Penn wiper.

Silver coin is soon to take the place of fractional currency. The mints will have \$10,000,000 ready in June.

Alexander McDonald, owner of one of the largest herds in Kansas, has not lost a single animal the past winter.

Florida furnishes a rattlesnake eight feet long, sixteen rattles, twenty years old; "heft," twenty-five pounds.

Delaware has adopted a new flag, six by six and a half feet. It will be spread over the State to keep the frost off.

Single ladies should be at church early so as to be on hand when the minister gives out the hymns. They might get one.

Holland has 12,000 windmills in operation, each doing a six or ten horse-power service through the twenty-four hours.

The retirement of General Spinner will necessitate the counting of every dollar in the Treasury, which will take until July.

The Boston school fathers have decided in favor of having sewing taught to the girls of the lower classes in the grammar schools.

The New York Herald thinks that when an Indian is caught who has undoubtedly killed another Indian, the true course is to give him a new gun and five dollars.

THE INDUSTRIALIST.

SATURDAY, APRIL 24, 1875.

Students Enrolled Since Jan. 7, 1875.

NAME.	COUNTY.
Beamer, David A	Jackson
Beckwith, Anson	Washington
Bell, Franklin P	Butler
Benedict, Flora A	Pottawatomie
Browning, Alice M	Riley
Browning, Emma E	"
Burnham, Wm P	Shawnee
Burroughs, Frank C	Riley
Burroughs, Arlettie M	"
Caldwell, Thomas J	Allen
Campbell, Flora A	Jackson
Campbell, Florence A	Riley
Cannon, Wm R	Allen
Chamberlin, Willis P	Riley
Child, Ella S	"
Coffey, Winnie	"
Copley, John T	Jefferson
Crouse, Clay C	Labette
Davidson, George K	Indian Ter.
Dow, Charles A	Coffey
Failyer, George H	Cherokee
Failyer, Mariam	"
Failyer, Miriam	"
Flack, John B	Dickinson
Fraunberg, Wm S	Labette
Fuller, Lewis F	Nemaha
Gale, Ella M	Riley
Gale, George A	"
Godfrey, Albert N	Greenwood
Gregory, Wesley	Osage
Grover, Mortimer C	Nemaha
Griffing, John S	Riley
Harper, Josephine C	"
Harris, Charles S	Franklin
Hiddleson, Frank W	Mitchell
Himes, Phoebe	Riley
Hixon, Columbus M	Jackson
Hixon, Samuel	"
Houston, Charles S	Riley
Houston, Lawrence N	"
Houston, U Grant	"
Howard, Jasper M	"
Hoyt, Fred O	Brown
Hubbell, Frank P	Jackson
Humphrey, Louis E	Davis
Huston, Charles M	"
Ingraham, Florence M	Riley
Jaquith, Walter W	Davis
Jenkins, Wm H	Shawnee
Johnston, May	Clay
Johnston, Nellie	"
Kimball, Carrie M	Riley
Kimble, Martha	"
Kimble, Mary A	"
Knipe, Wm A	"
Landon, Frank B	Pottawatomie
La Tourrette, Jas F	Ft Lyon, Colorado
Leasure, Marion F	Linn
Lofinck, Reuben E	Riley
Mails, Jennie E	Pottawatomie
Maltby, Wm	Saline
Maynard, Henry S	Miami
McKelvy, Robert	Washington
McCormick, Henry H	Woodson
Meeker, Julian L	Franklin
Merritt, Arthur H	Jefferson
Midgley, Thomas	Ottawa
Morris, Mary E	Riley
Moses, George C	"
O'Leary, Alena	Dickinson
Oursler, Alphonso R	Jackson
Parish, Effie A	Riley
Parish, Ella A	"
Parsons, Mildred B	Kansas City, Mo.
Pechner, Lizzie M	Riley
Phillips, Anna	"
Platt, George L	"
Platt, Hattie M	"

Pound, Byron H	Riley
Pound, Isabella B	"
Proctor, Belle A	Linn
Proctor, John C	"
Records, Francis A	Howard
Reed, Almeda J	Davis
Richmond, Corydon S	Sedgwick
Richmond, Gustavus A	"
Richmond, Irving	"
Riley, Lizzie M	Riley
Rogers, Julia F	Osage
Rogers, Louis B	Dickinson
Rushmore, Henry C	Jefferson
Russell, Charles N	Tierra, New Mex.
Sawyer, Nellie	Franklin
Sherman, Marcus	Brown
Shinkle, Ezra M	Linn
Shuemaker, Simon C	Nemaha
Sikes, Melva E	Pottawatomie
Smith, Henry	Osage
Smith, Mary B	Linn
Stewart, Albert A	Labette
Stewart, Alice E	Riley
Stone, Wm S	Butler
Streeter, Abbie J	Riley
Streeter, Chas A	"
Todd, Irving	"
Titsworth, Wilbur H	Atchison
Ulrich, Edwin H	Riley
Ulrich, William	"
Viets, Clayton L	Butler
Wake, George A	Clay
Weeks, Abbie C	Marshall
Whitman, Minerva E	Osage
Whitney, Genevieve	Riley
Wilkin, Frank H	Sedgwick
Williamson, Joseph E	Royal Center, Ind.
Williston, Carrie	Riley
Winne, Ella M	"
Young, Willoughby	Davis

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One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,

E. M. SHELTON, Sup't Farm.

The Nursery.

Very few shrubs or plants escaped the attacks of the locusts last year. The ruin is so general that there are only a few articles which we can offer for Spring planting. We offer

Apple Trees at \$6.00 per hundred.

A few Leib Cherry at 50 cents each.

Austrian Pine, Mountain Pine, and Pitch Pine, 50 to 75 cents each.

A few Large Red Cedars.

Allantus, 2 years, \$2.00 per hundred.

Ash Green, 2 years, \$1.00 per hundred.

Large shade trees for streets.—Elm, Maple, Box Elder, Ash, (both green and white,)—at 25 cents each. Address,

E. GALE,

Sup't Hort. Dep't.

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J. S. WHITMAN, Prof. Botany, Entom'y, and Geol'gy.
WM. K. KEDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Prac. Agricul. and Sup't Farm.
E. GALE, Prof. Horticulture and Sup't of Nursery.
J. E. PLATT, Prof. Elem'y English and Mathematics.
A. TODD, Sup't Mechanical Department.
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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial Pursuits.

The first object in each course is to make every student a master of the English Language, and an expert in its use; and also, skillful in Mathematics as employed in every day life, including Book-Keeping, Business Law, and Industrial Drawing.

FARMER'S COURSE.

In addition, the special object of the Farmer's Course is to give him a practical knowledge of the Structure, Growth, and Value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology, and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, in the Wood and Iron Shops, as will enable the graduate to perform readily each of the varied operations of Actual Farm Life.

OTHER COURSES.

In the other courses, the special studies are equally determined by the requirements of the proposed vocation.

To Mechanics, applied mathematics and industrial drawing are given instead of botany, chemistry, and zoology, as above; and shop practice in place of Practical Agriculture.

Superior advantages are offered to students of Higher Chemistry, to Mineralogists, Druggists, Operators, and Workers in Metals.

Full collections of the Plants, Insects, and Birds of Kansas, are being made as rapidly as possible.

The MECHANICAL DEPARTMENT gives daily practice in the following well equipped shops and offices: Carpenter, Cabinet, Wagon, Blacksmith, Paint, Sewing, Printing, Telegraph.

The course for women is liberal and practical, including Instrumental Music.

TUITION ABSOLUTELY FREE.

No contingent fees, except for use of pianos and organs. Boarding ranges from \$2 75 to \$4 per week.

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These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

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L. R. ELLIOTT,

Agent for sale of College Lands.

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Boiled Down.

One letter makes Mary marry.
Leavenworth will be twenty-one June 13.
Imports of silk one-half less than last year.
Florida has thirty millions acres timber land.
Barton County has six thousand acres in wheat.
The Union Pacific is about demolished by floods.
The Maine compulsory-education law works finely.
Japan and Egypt are establishing schools for girls.
President Grant has bought a \$40,000 stock farm.
The American Pomological society meets at Chicago.
More fruit trees set out in Morris county than any previous year.
In making Goblein tapestry, 28,000 distinct shadings of yarn are used.
Nineteen of the twenty-six millions of people in Italy can't read.
In fifty years the population of the United States will be 150,000,000.
One Illinois shorthorn bull sold for \$7,000, and \$4,000 refused for another.
Albany has the first locomotive used in the United States; imported 1830.
Eighty-four per cent of the "weather probabilities" in March were correct.
One ton of Arkansas anthracite coal equals two tons of best Pittsburgh.
Wheat is now cheaper in England than oats or barley, and is fed to cattle.
Seven hundred trees planted in Capitol square by Topeka last Friday. Good!
A sixteen year game of chess, by letter, between Baden and New York, won by latter.
The poverty of Kansas farmers is affluence compared with that of Minnesota farmers.
In England street cars are run by clock-work. Stationary engines wind up the springs.
Paris has an elm tree planted in 1605, the leaves of which are as early as those of younger trees.
Eighty-six thousand persons attend the five hundred and seventeen Sunday schools in Kansas.
There are not ten persons in America, out of a salaried position, who make a living by literature.
The New Englanders who howl loudest that farming doesn't pay, grow bushes on their best land.
Kansas wants the New Jersey judge who sentenced a defaulting cashier to eighty-four years imprisonment.
The Kansas Pacific has contributed in freight to the relief business \$25,000, and the A., T. & S. F. \$35,000.
Don't take too much pains in setting out trees. Many millions of trees grow very nicely that were never set out by any body.

SHELTER BELTS.

Influence Upon the Orchard and Farm.

[Condensed from a Lecture delivered by Prof. Gale, April 14, 1875, before the South-Eastern Horticultural Society, at Chanute.]

Both animal and vegetable life need protection. But men are not agreed in regard to the mode of protection. Nor do we all see eye to eye in regard to the theory of protection. This is well illustrated in the following statement from a late number of the Scientific American: "A well grown evergreen tree gives off continually an exodum of warmth and moisture that reaches a distance of its area in height; and when the tree planters advocate shelter belts surrounding a tract of fifty or more acres when the influence of such belt can only reach the height of the trees of such belt, they do that which will prove of little value." There are two fallacies stated here. First, that the climatic influence of a tree arises from its power to send off an "exodum of warmth" into the surrounding atmosphere. In relation to this we will only ask how many Christmas trees will be required to keep our parlor warm next winter? The second fallacy is that shelter belts can effect climatic changes only through this power to send off an "exodum of warmth." While the writer of this article may have aimed at a very good thing he has certainly missed the point as far as shelter belts are concerned.

Holding that forest culture in Kansas can be made a success; and that it is necessary to the prosperous settlement of the state, we desire to prove that FOREST CULTURE, IN THE FORM OF EXTENDED AND CAREFULLY ARRANGED SHELTER BELTS, MUST HAVE EFFICIENT CLIMATIC INFLUENCE.

In proof of this let us state some of the simple laws, which govern the radiation of heat, and the motion of the atmosphere.

LAWS OF HEAT.

1. Heat is radiation from all bodies and in all directions, the angle of incidence and of reflection being equal.

2. Heat of high intensity passes almost unobstructed through certain bodies, while the same bodies are opaque to heat of a lower intensity; thus, the sun sends its intense heat through the glass into the greenhouse, while the growing plants cannot radiate that heat back again through the glass, into the open air. This fact can be illustrated by a heated ball and a plate of glass, showing that heat of low intensity is almost entirely retained by the glass. The vapor of water operates like the plate of glass, permitting the free passage of the heat from the sun, but checking very largely the radiation from the earth. Thus an atmosphere saturated with vapor will check radiation with seventy times the power of a dry atmosphere.

3. The point of saturation varies with the temperature of the atmosphere. Then, the cooler the atmosphere the drier it will be, and hence the more rapid the radiation of heat; or, the drier the atmosphere under any circumstances, the more rapid the radiation of heat. It is calculated by Prof.

Tyndall, that one-tenth of the heat radiated from the earth is retained within ten feet of the earth's surface, by the vapor held in the atmosphere.

4. It is found that during the night time the atmosphere becomes sensibly warmer to the height of one hundred and fifty feet, as shown in the following table:

Let the thermometer upon the grass represent zero, and at 1 inch above the grass it will read 3° higher.

" 6 inches "	" "	6 "
" 1 foot "	" "	7 "
" 12 feet "	" "	8 "
" 50 "	" "	10 "
" 150 "	" "	12 "

You will notice that two-thirds of the entire rise of temperature occurs below twelve feet, and five-sixths of the increase in temperature below fifty feet. That is, the vapor within fifty feet of the earth is five times more important to vegetable life than that contained within one hundred feet above that point, and the vapor within twelve feet of the earth's surface has twice as much influence upon climatic conditions as one hundred and thirty-eight feet of atmosphere above that point.

These facts lead us at once to the conclusion that, as far as vegetable life is concerned, we are most interested in the condition of the air within twelve or fifteen feet of the earth's surface, and that a vapor laden atmosphere near the surface of the earth, not subject to violent commotion, must be a matter of the gravest moment.

Now it is well known that vegetable life, as well as the earth itself, is sending off continually a vast amount of moisture in the form of vapor into the atmosphere. Every spear of grass and every leaf is pumping up the moisture from the earth and sending it forth into the air in the form of vapor, thus giving to the earth a glassy covering opaque to radiated heat of low intensity. The amount of water drawn from the soil by growing trees, and given off in the form of vapor from the leaves, is simply immense. Thus it is stated that the Eucalyptus of Australia will absorb ten times its weight of water in a single day. (Rep't No. 259, H. R. U. S., on Timber Culture, page 94.) A small pear tree has been found to absorb and give off more than its own weight of water in forty hours. The effect of this transpiration is seen in the prevailing moisture of the forest. We have only to surround a house with a dense growth of timber, and we learn the immediate result in the dampness and mildew which pervade the dwelling. Hence the amount of moisture pumped up by the growing tree, often from great depths, can hardly be measured. This process will be constantly varying in its activity with the conditions of vegetable life.

Extended observations in Europe have proved that there is a marked excess in the rainfall of an extensive forest over that of the open country. This should be expected, since the falling rain, as it reaches the prevailing moisture of the forest, must condense and carry much of its contained vapor to the ground.

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, MAY 1, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE strong, terse paper on "Shelter Belts" should be read by every man in the State. How to raise crops in a dry season, is a question of vital interest; and the facts adduced by Prof. Gale are safer guides than an assorted cargo of fanciful theories.

IN order that our Associates may receive the credit justly their due, the author's name will hereafter be given with articles furnished by them, whether appearing as "editorial" or "outside" matter. The evident propriety of such a course will more than excuse the innovation upon typographical usage. The editorial of last week headed "Something Besides Corn," was written by Prof. Shelton.

THERE is far more brain than cheek in the adjournment of the Kansas Editorial Association to Independence Hall, July 4, 1876. The Western States will accept the invitation to "jine in," and the movement may result in the formation of a Western Press Association. The selection of Noble L. Prentiss as orator was peculiarly fortunate. His memory is full of odd Revolutionary facts, having a practical bearing; and he will be apt to warm up both the audience and the eagle.

THE present cold, backward spring is a real boon to the wheat growers. The cool, moist weather of the last two weeks is exactly the thing needed to repair the damage done by winter killing. A warm spring would have hastened the upward growth of the plant, but the stand would have been light and the heads moderately filled. As it is, the cool weather has done wonders. The roots have grown deep and wide, and the top is "stooling" beautifully. The indications are that wheat, and especially early sown, will in this vicinity be a good deal beyond an average crop.

Partial Report.

The people who said it could not be done were thoughtful, sagacious, and multitudinous; and the very fact that it had not been done was a good reason for their assertion. They said: "It may be practicable to teach the specific sciences most used by a farmer or a mechanic, though that is doubtful; but the attempt to give instruction and drill in the manual operations of the farm, and in those of a trade especially, as an integral part of a college course, will fail." In other words, they averred that an "education" and a "trade" could not be acquired simultaneously, and, in this sense, farming may be termed a trade.

The Committee asks leave to rise, report

progress, and sit again. It presents this number of the INDUSTRIALIST as a partial report. If any two arts are more difficult to teach than any other two, they are printing and engraving. These may fairly be taken as a test.

On an average, the twenty students who have set this type, have "recited" at the cases fifty minutes a day, five days in a week, for less than twelve months; and, at the same time, have studied as hard and progressed as well in other classes as have the pupils of any institution in the State. Five months ago, the young lady who engraved the largest of these cuts, had never used a chisel, but she had thoroughly mastered drawing.

Every one admits that an apprentice of two months, at ten hours a day, is not a journeyman, and is not to be judged by the journeyman's standard; therefore, no one can demand that our pupils in these departments shall work as rapidly and artistically as do experienced "journs." But we just rise to remark that if this composition can be done, and has been done, at the end of one collegiate year, we have a right to believe that, at the end of two more years, a clear demonstration will be given that the Kansas line of industrial education is feasible and valuable; and, which is of more importance, that these students will be able to earn their own bread.

The progress in the other departments has been as great as in these, only, from the nature of the case, the evidence thereof can not be presented by type. And when people assert that things which have been done, and are done every day, in the Kansas State Agricultural College, cannot be done, the statement does not frighten us to any remarkable extent, and, unfortunately, does not cause such a loss of appetite as to materially diminish our grocery bill. And so the Committee subsides.

Salt in Kansas.

Of all the many materials so essential to the necessities of life, salt must be placed among the first. Whether we consider it as an article of food, or in the relation it bears to the arts and sciences, it is equally invaluable. Salt is used extensively in the arts to make chlorine and chloride of lime to bleach cloths, in the manufacture of sulphate of soda and muriatic acid. It is an essential part of all soils, and is found in every plant. In fact, our very existence is dependent on that most abundant of all materials, common salt. For these reasons, we hail with pleasure the fact that already salt is being made in this State.

There are three sources of salt: beds of rock salt; sea water, which contains 2.75 per cent. of salt; and saline springs. This latter source is the form in which salt is found in any quantity in Kansas. These springs are

not very abundant, but are found in a few localities. In all cases in which salt is obtained from solution the brine must be evaporated by fire, or, in warm, sunny climates, by the heat of the sun. When the brine is evaporated rapidly the salt separates in small crystals, and is known as "table salt." When the brine is allowed to evaporate slowly, by the aid of the sun's heat, the crystals are very large and hard, and are known as "solar salt." There are various salts in solution in brine, but common salt crystallizes more rapidly, and these impurities are left behind in the mother-liquor.

Through the kindness of Prof. Platt, we received a specimen of the salt made at Alma, Wabaunsee County, and gave it a careful analysis. The salt is very white, and, with the exception of a small amount of lime, is quite pure. It compares very favorably with Michigan salt. The brine, we are told, is pumped up from a spring, seven hundred feet below the surface, and is so strong that the salt crystallizes out by simple exposure to the air. This makes a coarse variety of salt; to make the finer kinds it must be evaporated by artificial heat. We understand that the firm at Alma is manufacturing about five barrels a day of excellent salt. As soon as Kansas salt has made a reputation in the market it will undoubtedly supply the home demand at least. The day is not far distant when Kansas will produce her own salt, instead of sending a thousand miles for it.—Prof. R. K. Kedzie.

The Grasshopper.

In my opinion the people of Kansas are unduly alarmed at the appearance of young grasshoppers in various parts of the State. The same gregarious habit that caused the females to deposit their eggs close together in isolated places, where they are hatching in large numbers, will cause the young to keep very close together till they have attained their full size and take their flight. When these are met in large numbers upon their hatching ground, or are gradually leaving it in a rather formidable column, it should not be inferred that the whole State is covered by them in the same way. Their wingless condition, and the abundance of delicate spring vegetation, will save the crops from most of those that are born on the unbroken prairie. The most serious damage will occur in a narrow belt of country extending through the eastern part of the State, where the main swarm finally settled and remained. This grasshopper belt is not continuous and is quite irregular in outline. The hateful hopper will attain his full size and development of wings by the latter part of June or first of July, when he will take his flight. The amount of damage done anywhere will greatly depend upon the season. The present cold rains are unfavorable to his development.—Prof. Whitman.

THE INDUSTRIALIST.

SATURDAY, MAY 1, 1875.

Every student is requested to furnish locals.

Frank Patterson, Esq., of Junction City, will accept hearty thanks.

Mrs. Landon and Mr. and Mrs. Sikes visited the College this week.

It is very desirable that copy should be on hand Monday morning.

Captain Todd is building a powerful lathe and saw which will rip heavy stuff very cheaply.

A bound file of this paper will be one of the best souvenirs of College life, in after days. Subscribe!

Those who desire to keep posted in the work of the Agricultural College should subscribe at once for the INDUSTRIALIST.

A company of ladies and gentlemen serenaded the Websters a few evenings since, closing with a beautiful "Good Night" song.

The elegant monogram of the K. S. A. C., on Prof. Whitman's blackboard, was designed by Miss Ella Child. It will be preserved in a more durable form.

The INDUSTRIALIST, on behalf of all his colleagues, reaches out both hands in hearty congratulations to Prof. Wm. K. Kedzie upon his safe arrival in Europe.

We feel like patting on the back A. A. Stewart, Superintendent, and Wm. H. Jenkins, pressman, for their pains and patience. Haven't time to notice the typos, but soon will.

Keep your eyes open for locals. A fact which interests you may interest others. Write it up; boil it down; sign your name and hand it in. If deemed of general interest, and there is room, it will be used; otherwise, not.

The thorough instruction given in Instrumental Music this year will be still better next. Mrs. Wenden has succeeded in condensing and extending a course in Harmony that is especially valuable to the performer, and it will be improved each term.

The large scroll saw in the carpenter shop was planned and built throughout by Wm. Ulrich. The frame is strong and neat, and the iron work forged and turned to a nicety. A severe test was made of its capacity in sawing out brackets from solid two and one-half inch hard wood. It works well and rapidly.

FARM ITEMS.

Wheat quite knee high and in complete possession of the land.

The stock has wintered excellently upon a diet of prairie hay and oat straw.

Eight acres of red clover upon College farm. Drouth and grasshoppers injured it much; this spring only an occasional plant is seen.

Thirty-three varieties of clover and grasses have been sown in experimental plots the present season, and nearly all are up. Of these more anon.

During last week, besides usual care of stock, etc., half a mile of portable fence has been put up, and eighteen acres of ground have been plowed and planted to corn.

HORTICULTURAL ITEMS.

Have dug very few trees.

First cutting of asparagus.

Many of our young apple trees are dead.

Shall plant our orchard this year to corn.

The old college orchard planted this week.

Planting apple grafts this week. They have come out well.

A lesson in pruning. Be cautious in removing large limbs.

However carefully we may cultivate the ground, apple and pear trees will always suffer among peach trees.

Many of the larger apple trees cut back for top grafting last spring, suffered badly from defoliation. Some of them will not recover.

Term Examinations.

The present session closes Wednesday, May 26th. The examinations will begin Monday, 24th, and will be held at the hours named in the following programme:

HOURS.	MONDAY.	HOURS.	TUESDAY.	HOURS.	WEDNESDAY.
2-4	Arithmetic and Book-Keeping, Class "B." Telegraphy.	2-4	Printing. Drill in English.	2-4	Algebra, Class "A." Arithmetic Class "A." Phonography.
11-1	German. Geometrical Drawing. Analytical Chemistry.	11-1	Vocal Music. Class "B." Modern History.	11-1	Horticulture. Scroll Sawing and Turning.
10-12	Music (Organ.) Carpentry and Cabinet Making.	10-12	Botany. Carpentry and Wagon-Making.	10-12	Geometry. Latin. Botany.
9-11	English Grammar. Physics.	9-11	U. S. History. Mechanics.	9-11	Blacksmithing. Instrumental Music.
8-10	Practical Agriculture. Moral Philosophy. Printing.	8-10	Entomology. Analytical Chemistry.	8-10	Rhetoric. Free Hand Drawing.

Owing to the sickness of Mrs. Cheseldine, there will be no extended examination of the Sewing classes.

The patrons of the College in particular, and the public in general, are most cordially invited to attend.

Answers to Correspondents.

H—, Central City:—The time required to learn telegraphy depends wholly upon the aptness and practice of the student. Perhaps one year would be about the average, though we have pupils who, in less time, have taken twenty-five words per minute in writing.

A—, Goodrich, Kansas:—We do not pay students for reciting in the shops. The object of the shop is to give the instruction and practice needed in learning the given trade. Masters usually charge a three year's apprenticeship for that which we furnish gratis. In addition we give an education, which they do not furnish. We cannot pay the student for shop practice any more than for his practice at the blackboard.

We pay only when the Institution needs work which is solely for its own benefit and not for the student's benefit. But owing to the present hard times, you cannot rely upon anything in that direction. Boarding ranges from \$2.75 to \$4.00.

In answer to the question of W. C—, Carbondale: When should the prairie be burned to destroy insects? I recommend the burning of the grass adjoining cultivated fields to be done at once. A week ago would have been better. Where the fire can be controlled, set it out in the middle of a dry day, when the grasshoppers, chinch-bugs and the larvæ of myriads of other insects are in the grass, and the grass will burn close to the ground. In the evening, or after a rain, many insects are hidden among the roots of plants, under stones and other rubbish where the fire does not reach them. In a few weeks the earth will again be covered with grass and no bad consequences can follow. Prairies should be burned in the spring only.—Prof. Whitman.

Student's Column.

Found, just outside the fence the morning after my gate was securely barricaded by cord wood and stone, a handkerchief marked "L. E. H." The owner can have said handkerchief by calling at this office, proving property and paying for the insertion of this notice. No embarrassing questions will be asked.

Not a little interest is manifested by the members of the Webster Society at their meetings. The exercises are interesting and instructive. They have lately adopted a new constitution, the character of which bestows credit upon the society, and the book is elegantly printed. It is said by the oldest students that the society has never improved its members faster than during the present year.

ENIGMA.

It is amusement for the young;
It gives employment to the tongue;
When only two are taking part,
They often win each other's heart.
The students would enjoy it much,
But wisely are forbidden such.
There is no reference to the dancer,
And just three words are in the answer.

The answer will be given next week.

The Alpha Beta Literary Society, thinking that "Variety is the spice of life," held a moot court at their last meeting. As an exercise in the principles which some of the members had learned in the Commercial Law class, the suit chosen was one for damages for "non-fulfillment of contract." It was, of course, between members of the society.

The plaintiff claimed that the defendant had agreed to perform a certain piece of work within a specified time for a given sum of money, and failed to do so, whereby the plaintiff had sustained serious damage. The defence claimed that the defendant was insane at the time of making the contract, and, furthermore, that he was a minor, and therefore not bound to fulfill the contract. Both parties showed a practical knowledge of the legal bearings of the case. They contested the ground so closely that the suit occupied four hours. The shrewdness of both attorneys and witnesses, during the cross-examination, was quite amusing.

Although the parties engaged do not intend to make lawyers of themselves, they rightly think that this kind of drill will stamp that which they learned in class more indelibly upon their minds.

Special Notices.

APPLE trees for sale at \$6.00 per hundred. Apply to E. Gale, Sup't Hort. Dep't.

A FEW Leib Cherry trees for sale at fifty cents each. Apply to E. Gale, Sup't Hort. Dep't.

A FEW large Red Cedars for sale. Apply to E. Gale, Sup't Hort. Dep't.

AILANTUS, two years old, for sale at two dollars per hundred. Apply to E. Gale, Sup't Hort. Dep't.

AUSTRIAN PINE, Mountain Pine, and Pitch Pine trees for sale at fifty to seventy-five cents each. Apply to E. Gale, Sup't Hort. Dep't.

FOR SALE.—Two fine Devon cows, four years old, and excellent milkers. Also, one Devon bull, two years old. Price \$100.00 each. Address, E. M. Shelton, Sup't Farm.

LANCASHIRE pigs for sale, at \$10.00 each. A few very nice pigs now ready for shipment. Inquire of E. M. Shelton, at the College Farm.

FOR SALE.—Berkshire and Essex pigs, of excellent strains, during the season. Price \$10.00 each. Address, E. M. Shelton, Sup't Farm.

LARGE shade trees for streets, for sale at twenty-five cents each. The following varieties are offered, Elm, Maple, Box Elder, and both Green and White Ash. Apply to E. Gale, Sup't Hort. Dep't.

TO BUILDERS.

SEALED PROPOSALS WILL BE RECEIVED BY the undersigned, until Wednesday, May 13, at two o'clock P. M., for erecting and completing one new College Workshop; and also for re-modeling, for industrial and educational purposes, the present College Barn.

Separate proposals will be received for the stone work.

Specifications may be seen at the office of E. T. Carr, Architect, Leavenworth, and also at the office of the undersigned, in Manhattan.

N. A. ADAMS.

[Continued from first page.]

If the positions above taken be correct, we should expect that wooded lands would be cooler than the open fields in the day time and warmer in the night; and such a conclusion has been clearly established by extended observations made under the direction of the Bavarian government during the past six years.

The facts adduced prove that all vegetable life will cover itself with a glassy mantle, in density proportioned to the luxuriance of growth, and nearly opaque to the heat radiated from the earth.

Now can this glassy mantle be retained as a nightly and constant protection to vegetable life, or must it be swept away by the prevailing winds? To answer this question intelligently we must consider briefly some of the simple laws which govern atmospheric motion.

MOTION OF THE ATMOSPHERE.

There is a marked contrast in the motion of a liquid like water, and an elastic gaseous fluid like air. If we place an impediment in a creek the water flows immediately around the impediment, and will not flow over it as long as an open way can be found to the right or left. But the air not only moves around on either side, but piles up in front of whatever checks its course, and rolls over the top of the impediment as readily as it passes around. Thus a grove of timber or a thin shelter belt effectually checks the motion of the wind. The wind rises over the trees as indicated by the arrows in the

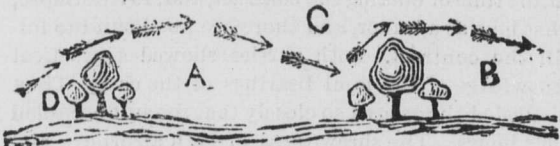


Fig. 1.

figure. And instead of falling like water to the ground it flows on as shown, and does not reach the original level until it has gone a distance of eleven times the height of the wind break. There will be a quiet atmosphere at A and B, extending not merely immediately about the trees, but to eleven times the height of the shelter belt, and even in the teeth of the wind at D there will be a quiet atmosphere. It is well known that while the wind may sweep with fearful velocity over a forest and powerfully agitate the tops of the trees, the motion is comparatively slight within the forest; the same is true of a succession of shelter belts. The wind will sweep with great force over the trees at C, while all below remains quiet. The extent of these quiet spaces at A and B, will of course depend upon the height of the shelter belts. Any one who will take the trouble can test the correctness of these views for himself.

We expect then that the most important and positive results will follow a well devised system of protection. It would exert a controlling influence over all farm operations. A judicious system of protection would be attended with the most beneficent results, while under certain other conditions it might be attended with disaster.

FACTS.

All this, some will say, is theory. But Kansas in 1874 gave us along the line of the M., K. & T. R. R., and in other parts of the state, some important facts in this direction. There were many parts of the state where corn was an entire failure. In a few localities corn matured a fair crop, even in exposed conditions. And there were other localities where corn yielded a crop only under very

favorable conditions of culture and protection. It is these localities that are most interesting to us now. Space will permit at present the presentation of only a few of these cases reported to me by Robert Miliken, H. E. VanDeman and others.

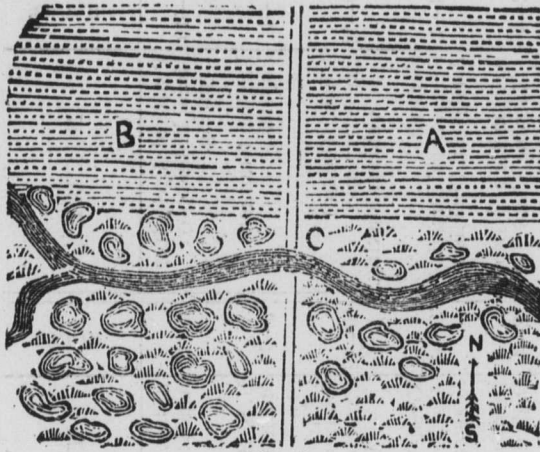


Fig. 2.

We have here represented a corn field, Isaac Smith's, fourteen miles south-east of Emporia. A B, cornfield. At C the road passes through the timber, leaving an opening for the wind. As a consequence, no corn matured near the road on either side. The timber south of B was very heavy, and the yield of corn in that part of the field was forty bushels to the acre; while south of A the timber was much lighter, and as a result the yield of corn was not more than twenty bushels to the acre.

Fig. 3 represents a field of corn reported by Mr. Van Deman, situated on the Neosho River two miles south of Neosho Falls. At A the yield of corn was forty bushels to the acre. Further n'th at B, beyond the influence of the southern protection, the corn dried up and was much lighter.

Figure 4 represents a corn field north and east of an orchard eighteen years old, trees large and closely planted, Linn county, Kansas. Reported by M. F. Leasure as yielding in 1874 twice the corn of any other land upon the farm, though in ordinary seasons this field does not yield as good corn as some other parts of the farm. Another case is that of B. F. Leonard, ten miles east of Emporia. Mr. Leonard had two fields in corn last year on land cleared of timber, and at least one-half mile from the prairie on the south. "He raised," says Mr. Miliken, "the heaviest corn which I saw in 1874." Corn from this field took the premium at the Lyon County Fair, and was good enough for any season. The yield was sixty bushels per acre.* Several other cases have been reported with a careful

*If the theory presented be correct; the half mile of timber south of this field should have exerted a marked influence in supplying moisture to the corn; and the large yield shows that such was the fact.

attention to all the incidental circumstances, so as to leave no doubt in regard to the direct influence of protection upon the corn crop of that immediate vicinity. In one case the corn was good for fifteen or twenty rods north of the timber, while beyond that line there was little or no corn. In another county where a medium crop was made without protection, the lightest corn is

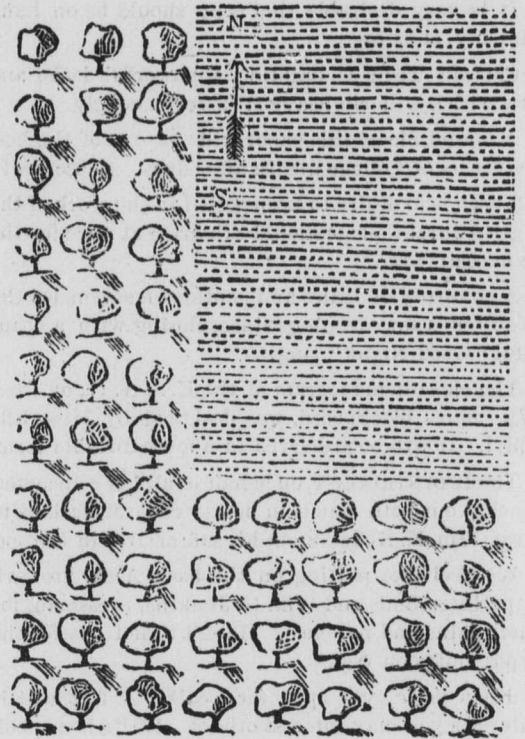


Fig. 4.

reported on the southern side of the fields where most exposed to the winds. The above facts are given only as examples of those which have been reported. They are facts which the practical farmer and orchardist in Kansas need to study. If we doubt the deductions of science, we certainly ought not to be slow in accepting the testimony of experience. Tree planters have long advocated shelter belts, for they know the deductions of science are in their favor, and the testimony of experience has been brought across the ocean to prove these positions; but the disasters of 1874 have brought out the experienced testimony of hundreds in Kansas. These can say at least, that we know whereof we affirm when we report that in our experience shelter belts have exerted a controlling influence upon farm crops.

It is time for the farmers of Kansas to look at the practical side of this question. The whole matter of protection needs to be thoroughly studied. Let the whole subject be carefully systematized with reference to the broadest results. We need to consider, at large, what to plant; how to plant; when to plant; in what way to combine and extend our shelter belts; how the interests of neighborhoods, towns, and even counties, run together in this work; how the interest of every property holder may be concerned in this matter; what may be justly claimed of our state and general government to encourage the work; and, lastly, how to reach and gain the attention of the great mass of farmers on this question. These points are too broad and too important for a brief discussion.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

TOPEKA, KANSAS.

Papers, Pamphlets, and Books neatly bound.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

Vol. 1.

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No. 3.

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CASH DOWN!

One cent per word for each insertion. Special notices two cents per word for each insertion. Advertisements of less than ten words to be counted as having ten words.

Displayed advertisements at ten cents per nonpareil line of space occupied. Address,
A. A. STEWART, Manhattan, Kansas.

The Industrialist.

The INDUSTRIALIST is issued, in part, to afford the members of the printing classes of the Agricultural College regular drill in the work of printing and publishing a weekly newspaper; in part, to epitomize current events for the benefit of its student readers; in part, to photograph the work of the several departments of the Agricultural College, for the information of its patrons and the people; in part, to discuss the educational system and methods of Kansas from the stand-point of the rights and necessities of the industrial classes; and, in part, to contribute such practical facts of science as may increase the profits or pleasure of the farmers, mechanics, and business men and women of Kansas. In other words, it proposes to say and do those things which may properly and naturally be said or done by persons engaged in the daily routine of an Institution created by the Nation, and guided by the State, "to promote the liberal and practical education of the industrial classes in their several pursuits."

Editorial Notes.

As every town mentioned in Revolutionary history will have its Centennial celebration, there are seven years of reflected glory ahead of us.

THE report of the Kansas State Board of Agriculture is one of the most valuable ever issued. It is masterly in substance, and, typographically, a perfect gem!

FOR the benefit of Kansans emigrating to California, the Chinese persimmon is being cultivated on the Pacific. Every facility will be afforded for a first class and extensive pucker.

"As the twig is bent, the tree's inclined." In this fast age the twig-state is a brief one. Every youth in his teens is a vigorous sapling, ambitious to become a lofty, umbrageous tree. The question is, where shall the tree grow? Shall it be in the straightened enclosures of the so-called professions, already crowded with a struggling growth, or on the broad plains of business and manual labor?

Boiled Down.

Grasshoppers leaving.
Wamego pitchforks catfish.
Something about dogs—fleas.
President Grant is fifty-three.
Cholera has appeared in India.
Population of Salina, 568 adults.
Muscotah reports 5,000 acres in flax.
Paola cheese factory nearly finished.
Wichita reports a fine deposit of gypsum.
Buffalo gnats killing horses in Tennessee.
The Burlington cheese factory is at work.
Harper's Magazine is twenty-five years old.
Coal under three-fourths of Labette county.
Montgomery county has 2,000 acres in cotton.
Kansas raised 300,000 pounds tobacco last year.
Persons leaving Kansas go further and fare worse.
Every rain storm this spring has cleared off cold.
St. Louis has just launched its first iron steamboat.
The Traveler reports peaches safe in Cowley county.

Government has given to soldiers 74,052,800 acres of land.

The snow birds lived well on grasshopper eggs last winter.

Kansas is bound to be the great cheese maker of America.

Salina and Lincoln Center both report gold bearing specimens.

The Paola Spirit estimates 40,000 acres of flax in four counties.

Furnish your own tooth brush and newspaper—don't borrow.

The amount of gold now in use is estimated at \$5,135,000,000.

The Board of Agriculture is hard at work on the census of 1875.

The Republican prefers the Council Grove salt well to a gold mine.

Alma school boys throw stones, and George Boydston lost an eye.

Travelers report better wheat in Kansas than in any other state.

Barton county cattle have had plenty of grass since March 31st.

New Hampshire is one-ninth and Massachusetts one-tenth the size of Kansas.

As the Fourth of July comes on Sunday the eagle will be aggravated on Saturday.

Berlin has the deepest well in the world, 4,194 feet; 3,907 feet are in a bed of rock salt.

The activity of the New York book trade is a sure indication of returning prosperity.

A Sedgwick county farmer accumulated 2,000 fruit, and 5,000 forest trees in three years.

The Missouri river is disposing of real estate, at ruinous rates—washing away farms.

The first visitation of grasshoppers was in 1867, according to white and Indian testimony.

Prof. Newlon has completed a geological survey of Cherokee, Labette and Chataqua counties.

Ellsworth Reporter counted sixty-five different varieties of wild flowers on prairie last year.

LaCygne bought hickory wood at \$1.50 per cord, and coal at nine cents per bushel, last winter.

A chalk mark, half inch wide, around upper edge of sugar buckets or barrels, will keep ants out.

In viewing the painting of "the dog after Landseer," Sol Miller wants to know what he is after him for.

The tunnel under the Hudson river at New York will pass 500 freight trains a day, in addition to passenger travel.

The high death rate among adults in all parts of the world, during the past winter, is attributed to the unparalleled changes of weather.

New Zealand has just imported a cargo of birds to eat bugs, among which were black birds, thrushes, starlings, gold-finches, yellow-hammers, and part-

ridges.

Forage Plants in Kansas. No. II.

BY PROF. E. M. SHELTON.

There is no truth in agriculture that has a more general acceptance than that the perennial grasses lie at the foundation of all improved systems of farming.

In Kansas we have hardly yet come to feel the full force of this truth. The boundless range which this state affords its herds, and the natural fertility of its arable lands, make this much less a question of to-day than of the future. Ten years hence all this will be changed. Within that time a very large portion of the "range" will be occupied as farms, and the native grasses from excessive cropping will rapidly fail. Already this process has sufficiently advanced to be well understood by stock men. In the vicinity of towns and, indeed, wherever the native grasses are closely pastured, the character of the natural herbage rapidly changes; the perennial grasses give place to annuals greatly their inferiors, and, during the transition, weeds rapidly multiply. Upon the alluvial bottoms adjacent this city, where only a few years since waved luxuriant grasses "waist high," are now seen dense masses of coarse weeds alternating with patches of feebly growing annuals.

But this is only one side of the question. Our arable lands will not always be thus fertile. Not always will they honor thus promptly every draft made upon their accumulated wealth. The "tickle of the hoe" alone will not always call forth the responsive harvest laugh. "How shall we obtain hay and pasturage for our herds?" is a question that will not come alone; that other question "How shall we maintain the fertility of our cultivated acres?" will come with it, if it does not go before it. Even if we were assured of the future supply of prairie hay and pasturage, the tame grasses are none the less important to Kansas farmers. Ultimately we must return something to the soil, if its productive power is maintained, and this we shall do best and cheapest by frequently plowing under the mass of roots and herbage which constitutes the sod of pastured fields. So soon as our farming takes into account the future condition of the farm, perennial grasses become indispensable.

MILLET AND HUNGARIAN.

The growth of millet and Hungarian grass has long held an important place in Kansas farming, and where the object is simply the production of hay these annual grasses possess a great value. But where we consider all the objects of the grasses, the growth of millet is the merest temporizing. I question much if, when the perennial grasses can be grown, a farmer can afford to plow and seed annually for a crop of hay alone. The whole argument is briefly summed up thus, millet requires an annual plowing and seeding; it returns nothing to the soil, but rather the reverse; it notoriously exhausts the land; it is not a pasture grass. For all of these reasons millet and Hungarian can never take the place of clovers and the perennial grasses.

THE INDUSTRIALIST.

SATURDAY, MAY 8, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE annual Oration before the Kansas State Agricultural College will be delivered by NOBLE L. PRENTIS, Editor of the "Commonwealth," Wednesday evening, May 26.

Head Work and Hand Work on the Farm.

To raise a hundred acres of corn or wheat is a much easier task than to dispose of this produce to the best advantage. To grow large crops on a virgin soil like that of Kansas, during "good years," is a question of mule power. But to so shape the business of the farm that climatic variations and insect ravages shall have the least effect, and, especially, to so plan the work of each season and every department that no advantage is lost, will test the best ability of the farmer.

The most common mistake, and the most dangerous that farmers make, is in considering farming as merely a question of plowing, seeding, and harvesting. Farmers generally do not manage enough. Too often the planning with the profits is left with middle men and outsiders. It has always been a mystery to me that crops which only "half pay" the farmer, abundantly pay every one else through whose hands they chance to pass.

The effects of a lack of study are seen in a score of matters connected with the farm. The farm is mortgaged for expensive machinery which is not in use a month during the twelve. Valuable animals are purchased at long prices, not because they sustain any relation to the real wants of the farm, but to gratify a passing notion or fancy. As a result of all this, the farm sinks money every year the farmer tills his mortgaged acres, feeling in his heart that "farming don't pay." If his son seems to be possessed of a little more than average intelligence, "he is intended for something better than a farmer," and is sent to join that struggling multitude which makes up the professions.

The truth is, forethought and afterthought upon the farm have a very great cash value. Manual labor, when well done, is the cheapest of all farm work. Good men, who can skilfully perform all the manual operations of the farm, are to be had in abundance at twenty dollars per month; but the man who to this adds a thorough knowledge of the comparative value of the various breeds of the best domestic animals; of the best means of preserving and applying manures; and, in short, general farm management, can readily acquire five times that sum. I once heard the founder of Cornell University say "that it was easier to fill any chair in the University than the chair of practical agriculture.

Men having the ability necessary for this position could make more money upon the farm than Cornell University could afford to pay them."

The man who can manage the cropping and general work of a farm of 5,000 acres it is not difficult to find,—but he who, besides, can keep all the little wheels of this vast machine moving harmoniously, is a genius. Great poets and great statesmen are just as common as are great farmers of this stamp. —[Prof. Shelton.

Plant Trees Now.

In a few days the time to plant trees about our houses will be past for this year. A few hours given to planting trees upon our farms just now will pay a hundred fold in a few years; that is, if we plant the hardy kinds. If we are to make our plantations successful we must rely in the beginning upon our native trees mainly.

For a street tree we can scarcely do better than select the White Elm (*Ulmus Americana*.) It is a magnificent tree when fully developed. It will endure more hard usage, exposure about dwellings and in the streets, than most other trees. It will seldom be broken down by the winds or snows. Under ordinary circumstances the wood is not esteemed as valuable, and yet is sometimes used successfully for the purposes of the arts.

The Red Elm (*U. Fulva*), though not so handsome a tree, yet claims consideration because of the greater value of its timber. There is certainly no reason why the Red Elm may not be planted for shade, shelter and timber. It is to be preferred in street planting to some of the tenderer exotics often imported.

The Ash, both white and green, is valuable for shade and timber. To these we can add the Box Elder, for shade.

It is important to protect the bodies of newly planted trees. For this purpose a wrapping of old sacking, or of hay, is very convenient; indeed almost anything which will keep off the sun. This is especially desirable with trees large enough for planting in the street. Thousands of trees die each year, just for the want of this slight and inexpensive protection.

For forest culture upon the farm it is important that we consult economy. For this purpose we want trees by the 10,000. They should be small so that the work of planting may not be too great. They must not be costly. Then, we cannot do better than take the best of our own trees. Those that every stream and ravine in Kansas will furnish, are the ones we want; as the cottonwood, ash, box elder, and black walnut. It may not be amiss to add to this list the osage orange, a tree native, I am told, to the southern portion of the State. This is a tree which can be planted very cheaply, and

which will probably be as valuable for commercial purposes as any above named. There are other trees deserving of notice, but the above are named now because they will cost little.—[Prof. Gale.

Editorial Correspondence!!

STRATFORD ON AVON, England, }
April 18, 1875. }

As you see from the above, I am spending the Sabbath at the old home of Shakspeare. I landed at Liverpool one week ago to-morrow, after a very quiet and pleasant but rather long passage from New York. We were out eleven days. Went almost directly to Manchester, where I visited

OWEN'S COLLEGE.

Was very cordially welcomed by Profs. Roscoe and Balfour Stewart, who courteously gave up their time to show me the Laboratory. The former is now the most eminent Chemist in England, and his Laboratory is certainly magnificent. It is built of white brick, and is probably the best ventilated in Europe. The air current is by the shaft system, and the arrangement of hoods, baths and other appliances is especially economical, and such as we can readily adopt from plans and specifications now in my hands. His Lecture room is arranged as is ours, and seats four hundred students. The building cost him \$75,000, but there are many features about it which, in my opinion, could be greatly improved.

A SENSIBLE DUKE.

Well, I have been making my way southward. By the way, the Duke of Westminster has lit upon your "Kitchen-Laboratory" idea. I visited his country palace, and found he had just finished, at a cost of \$15,000, a beautiful building in which his three daughters should learn to cook, with every facility for making an application of scientific principles. This estate is considered the finest in the Kingdom, and is twelve miles long by eight wide. The palace is seven hundred feet long.

SHAKSPEARE.

Traveling is now most delightful. The tourist season has not yet set in, and so one has plenty of quiet and elbow room. This town of Stratford is a beautiful old place. The old house in which Shakspeare was born is wonderfully well preserved. It is now under charge of the government. Have just been to church in the old Trinity, where he lies buried. On his tomb is this quaint inscription:

"Good friend, for Jesus' sake forbear
To digg the dust enclosed here.
Blesse be ye man that spares thes stones,
And curst be he that moves my bones."

So, though his wife and daughters were anxious enough to be buried in the same tomb, they didn't dare disturb it on account of the curse.

Shall reach London by the middle of the week, remain there a week, and then across to Germany and France.

With kindest regards, yours ever,
WM. K. KEDZIE.

THE INDUSTRIALIST.

SATURDAY, MAY 8, 1875.

Chapel service to-morrow by Prof. Lee.

Town subscribers or advertisers can leave their orders at Fox's Bookstore.

Hon. B. L. Kingsbury is in town, attending the regular meeting of the Executive Committee. Good.

Tickets for the Band Entertainment for sale at Johnston's Drugstore. Admission twenty-five cents. Reserved seats fifty cents.

Go to the Bazar for Millinery, Music, Gloves, Hose, Balls, Bats, and every thing else. Lowest prices; no misrepresentations. (3-5.)

A mechanical department is a comfortable thing to have around. If a "planer" needs squaring; or an office without a lead cutter wants brass rule in exact lengths; or a gate needs fixing—as gates always do; or a wagon is out of kelter; or fancy turning is desired; or—anything; you know where to go.

Talk about enterprise! Here we are, on only the third number, with a special Editor traveling in Europe, at great expense—to himself, and favoring our readers with letters—that were not intended to be published! And, too, we have enlarged by the addition of a whole-inch to the paper! Subscribe!

The Dramatic Entertainment given by the Band, comes off at Peak's Hall, Thursday and Friday, next week.

Meteorology of April 1875, condensed by Prof. Kedzie from the records of the Kansas State Agricultural College:

Mean temperature of month,	- - -	48° 76
Maximum " " 19th,	- - -	82°
Minimum " " 1st,	- - -	19°
Range of " "	- - -	63°

Per cent. of cloudiness, - - - 52
Rain fall for month, 13.5 inches, which is .85 of an inch below the average of April for this station.

The mean temperature of month is 3° 97 below the mean temperature of April for the past fourteen years.

As indicated by fourteen years' observations, the range of rain fall for April is from .50 inches in 1870, to 9.12 inches in 1863.

As a sample of the topics studied by the class in Practical Agriculture this term, we give the examination questions for the month of April.

1. Advantages of a rotation of crops; rotation in nature.
2. Experiments of Laws and Gilbert bearing upon rotation of crops. Uses of Summer-fallow.
3. Give a rotation for Kansas, and point out its advantages.
4. Upon what does the value of farm-yard manure depend? How to increase the supply.
5. Sources of waste in manures. How to prevent waste and best preserve manures.
6. The best method of applying manures and why. Value of commercial fertilizers.
7. Best form for barn-yard. Box system of feeding.
8. Objects of composting.
9. Age and condition as affecting fattening. Cost in feed of one pound increase of live weight.
10. Give plan of cropping for soiling. Modified soiling for general farming.

Learning to telegraph at a College or Institute is looked upon by a great many telegraph operators as a thing next to impossible. But we will ask, why cannot it be learned at a College as well as in a Western Union or Railroad telegraph office, if the facilities are as good or better? We claim to have better facilities for teaching than any of the offices above named. Where will you find an operator who will take a student into his office and work with him day after day in teaching him? Operators of this kind are as scarce as Polar bears in Kansas. Instead of the student receiving that special instruction which is necessary to secure a rapid progress in any art or science, he is simply given the Morse alphabet and taught how to make it with the key; then is informed that he is required to do all the "odd jobs" about the office and keep himself entirely out of the way during business hours. The apprentice is left to pick it up as best he can. The best proof is the fact that students who have been with us from six to nine months go into telegraph offices and do business with as much ease as any young operator.

May Day was so cold and blustering; more like a March day with its driving winds and gloomy skies. Our students, however, believed in the almanac and by dint of extra effort secured the requisite amount of flowers for May Baskets.

All the more grateful it seemed to us, when, on replying to a gentle tap at the door in the evening, we saw with delight, the daintiest, sweetest May Basket hanging on the knob. Chains of twisted paper, interlaced most skillfully; fringes, neatly imitating trailing mosses; and, within, nestling among geranium leaves, lovely spring flowers—wild flowers from prairie and glen, blue and white Anemones, gone already to sleep, as each night the little methodic creatures do alike on the bluff or in the vase. Vetches peeping out from the downy-like nest mid fringes and foliage, wide-awake every where, as when they caught the gaze of the old French voyager, who from their fruits named them ground plums. Violets, blue violets, at home every where! But we could not tell half the delight the basket afforded us. Thanks to the fairy fingers that wove it, to the fairy feet that brought it, and we can hardly say to the wings that bore them so tantalizingly out of sight.

FARM ITEMS.

Oats and barley are very promising. Under the influence of the late rains, spring seeded timothy and alfalfa are starting rapidly.

Additions to the college stock, in the natural way, are constantly in order. Berkshires and Devons are the latest arrivals.

The very dry weather of the past year, followed by the late severe winter, has seriously injured our hedges. Stone walls are not necessarily four years in growing; they do not winter or summer kill; they require no trimming; taking all in all, they are the cheapest fence, and "thieves do not break through and steal."

HORTICULTURAL ITEMS.

Planted peach seed this week. Have removed some dead peach trees. A portion of the apple orchard should be reset. Of the quince stocks, a large percentage have been killed.

Have fitted the ground and planted more corn in the orchard. Have set out peach and plum grafts, also the balance of the pear and apple grafts.

Some of the young pear trees are dead; many of them are seriously injured. The extent of the injury can be better reported a few weeks hence.

Term Examinations.

The present session closes Wednesday, May 26th. The examinations will begin Monday, 24th, and will be held at the hours named in the following programme:

HOURS.		MONDAY.	
8-10	Practical Agriculture. Moral Philosophy. Printing.	9-11	English Grammar. Physics.
10-12	Music, (Organ.) Carpentry and Cabinet Making.	11-1	German. Geometrical Drawing. Analytical Chemistry.
2-4	Arithmetic and Book- Keeping, Class "B." Telegraphy.		
HOURS.		TUESDAY.	
8-10	Entomology. Analytical Chemistry.	9-11	U. S. History. Mechanics.
10-12	Botany. Carpentry and Wagon-Making.	11-1	Vocal Music. Algebra, Class "B." Modern History.
2-4	Printing. Drill in English.		
HOURS.		WEDNESDAY.	
8-10	Rhetoric. Free Hand Drawing.	9-11	Blacksmithing. Instrumental Music.
10-12	Geometry. Latin. Botany.	11-1	Horticulture. Scroll Sawing and Turning.
2-4	Algebra, Class "A." Arithmetic Class "A." Phonography.		

Owing to the sickness of Mrs. Cheseldine, there will be no extended examination of the Sewing classes.

The patrons of the College in particular, and the public in general, are most cordially invited to attend.

Student's Column.

Answer to Enigma No. 1.—Moonlight Walks.

A very pleasant party met at Mrs. Jaquith's last Thursday afternoon, and, after a superb supper, enjoyed several closely contested games of croquet. The whole evening was delightful.

Among the many May baskets hung last Saturday, none was more beautiful than the one received by the Websters. They return their hearty thanks to the ladies for favors bestowed, and for their continual manifestations of interest in the Society.

CHALLENGE.

EDITOR INDUSTRIALIST:

You will oblige the members of the Bluemont Base-Ball Club, by publishing the following:

We, the members of the Bluemont Base-Ball Club do hereby challenge any base-ball club in the city of Topeka, to play a match game on the 28th of May, 1875. B. H. POUND, Captain.

G. K. DAVIDSON, Secretary.

ENIGMA. No. 2.

I have no feet but have a head;
Therefore I speak and am not dead.
With syllables five my name is spelled;
Although I'm small, I'm not excelled.
My first is where the travelers lodge,
And oftentimes their bills they dodge.
My second is three-fourths of dust,
(A plague which seems to me unjust.)
Three-fifths of trial make my third;
My fourth annexed, completes said word.
My last is but three-fifths of whist.
And on this hill, I now exist.

The Alpha Beta Society met as usual on Friday the 30th. Their exercises on the whole were very interesting, as well as instructive.

Under the regular order of debate, the value of mathematics, compared with other sciences, was ably discussed. The argument produced by the debaters showed careful preparation. Under the order of extemporaneous speaking, some very appropriate remarks were made on various subjects. Quite an excitement was raised on the relative importance of Free Trade and Tariff, which resulted in a thorough overhauling of the subject.

Special Notices.

APPLE trees for sale at \$6.00 per hundred. Apply to E. Gale, Sup't Hort. Dep't.

A FEW Leib Cherry trees for sale at fifty cents each. Apply to E. Gale, Sup't Hort. Dep't.

A FEW large Red Cedars for sale. Apply to E. Gale, Sup't Hort. Dep't.

AILANTUS, two years old, for sale at two dollars per hundred. Apply to E. Gale, Sup't Hort. Dep't.

FOR SALE.—Berkshire and Essex pigs, of excellent strains, during the season. Price \$10.00 each. Address, E. M. Shelton, Sup't Farm.

AUSTRIAN PINE, Mountain Pine, and Pitch Pine trees for sale at fifty to seventy-five cents each. Apply to E. Gale, Sup't Hort. Dep't.

LARGE shade trees for streets, for sale at twenty-five cents each. The following varieties are offered: Elm, Maple, Box Elder, and both Green and White Ash. Apply to E. Gale, Sup't Hort. Dep't.

For Wood and Metal Turning; for light and heavy Scroll Sawing; for Tables, Bureaus, Office Desks, and Parlor Brackets; for Blacksmithing, Wagon-Making, Repairing, and Painting, apply to A. Todd, Sup't.

TO BUILDERS.

SEALED PROPOSALS WILL BE RECEIVED BY the undersigned, until Wednesday, May 13, at two o'clock P. M., for erecting and completing one new College Workshop; and also for re-modeling, for industrial and educational purposes, the present College Barn.

Separate proposals will be received for the stone work.

Specifications may be seen at the office of E. T. Carr, Architect, Leavenworth, and also at the office of the undersigned, in Manhattan.

N. A. ADAMS.

S. M. FOX,
BOOKSELLER and STATIONER,
Dealer in

Fine Stationery, Pocket-Books,
Envelopes, Gold Pens,
Blank Books, etc.

No. 127, Poyntz Avenue, Manhattan. (3-7.)

THE INDUSTRIALIST.

SATURDAY, MAY 8, 1875.

PROF. SHELTON informs us that Geo. Martin, of Topeka, has just bound some magazines for him in superior style, and says that the bill was, if anything, less than it would have been at the East.—Nationalist.

If the West ever expects to become independent and cease to pay tribute to the East, manufacturing establishments of all kinds must be established. Instead of paying money for freights, we must bring manufacturers, machinists, etc., into our borders.—Girard Press.

THE St. Louis Republican says: In the Kansas Agricultural College, at Manhattan, there are at present one hundred and eighteen students, of whom forty-five are ladies. An investigation into the curriculum of the institution is adapted to convey the belief that it is exceedingly practical.

SURROUNDED by an agricultural region second to none in the West; wheat averaging to the acre more than Illinois, Missouri or Iowa; our uncultivated lands covered with native grasses, which makes stock raising very profitable; climate well adapted to the growing of all kinds of fruit produced in this latitude, and seasons delightfully pleasant, it is now our duty to encourage manufacturing interests.—Junction Union.

The following item clipped from the Emporia Ledger corroborates the views advanced by Prof. Gale in his Shelter Belt article published last week.

It is true that some fields of fall wheat in various sections of the country were plowed up and put in corn this spring, while other fields in the immediate vicinity and planted about the same time as were those plowed up, look well and give promise of a fair yield. So far as we can understand, that which was protected by timber or hills from the north winds suffered very little from the severe weather of the winter.

Farming as a Business.

It is very doubtful, all things considered, whether there is, in the long run, a more remunerative branch of industry than farming. Statistics certainly show that in merchandising there is a vastly larger percentage of failures than in farming. Where one merchant succeeds and accumulates wealth, a dozen fail and go into bankruptcy. Even among successful merchants it is hard to find one who has not, at some time in his career, been unfortunate and lost all he had.

Professional life pays the poorest of all. Not one doctor in fifty accumulates a competence. Those who do succeed perform an amount of physical and mental labor unequaled by any other class of the community.

Lawyers as a class are poor men. They who rise to eminence in this profession are very few. Those who accumulate wealth are fewer still. The "briefless barristers," the "limbs of the law," who live nobody knows how, the legal deadbeats who never pay a debt, abound more or less in every community.

Looking the whole ground over, there is no employment which for the amount of capital used affords such a safe, reliable, and in the long run, remunerative investment as farming. The men who fail at farming are generally men who would fail at anything else.—Lawrence Journal.

Students Enrolled Since Jan. 7, 1875.

NAME.	COUNTY.
Beamer, David A	Jackson
Beckwith, Anson	Washington
Bell, Franklin P	Butler
Benedict, Flora A	Pottawatomie
Browning, Alice M	Riley
Browning, Emma E	"
Burnham, Wm P	New Mexico
Burroughs, Frank C	Riley
Burroughs, Arlettie M	"
Caldwell, Thomas J	Allen
Campbell, Flora A	Jackson
Campbell, Florence A	Riley
Cannon, Wm R	Allen
Chamberlin, Willis P	Riley
Child, Ella S	"
Coffey, Winnie	"
Copley, John T	Jefferson
Crouse, Clay C	Labette
Davidson, George K	Indian Ter.
Dow, Charles A	Coffey
Failyer, George H	Cherokee
Failyer, Mariam	"
Failyer, Miriam	"
Flack, John B	Dickinson
Fraunberg, Wm S	Labette
Fuller, Lewis F	Nemaha
Gale, Ella M	Riley
Gale, George A	"
Godfrey, Albert N	Greenwood
Gregory, Wesley	Osage
Grover, Mortimer C	Nemaha
Griffing, John S	Riley
Harper, Josephine C	"
Harris, Charles S	Franklin
Hiddleston, Frank W	Mitchell
Himes, Phoebe	Riley
Hixon, Columbus M	Jackson
Hixon, Samuel	"
Houston, Charles S	Riley
Houston, Lawrence N	"
Houston, U Grant	"
Howard, Jasper M	"
Hoyt, Fred O	Brown
Hubbell, Frank P	Jackson
Humphrey, Louis E	Davis
Huston, Charles M	"
Ingraham, Florence M	Riley
Jaquith, Walter W	Davis
Jenkins, Wm H	Shawnee
Johnston, May	Clay
Johnston, Nellie	"
Kimball, Carrie M	Riley
Kimble, Martha	"
Kimble, Mary A	"
Knipe, Wm A	"
Landon, Frank B	Pottawatomie
La Tourrette, Jas F	Ft Lyon, Colorado
Leasure, Marion F	Linn
Lofinck, Reuben E	Riley
Mails, Jennie E	Pottawatomie
Maltby, Wm	Saline
Maynard, Henry S	Miami
McKelvy, Robert	Washington
McCormick, Henry H	Woodson
Meeker, Julian L	Franklin
Merritt, Arthur H	Jefferson
Midgley, Thomas	Ottawa
Morris, Mary E	Riley
Moses, George C	"
O'Leary, Alena	Dickinson
Oursler, Alphonso R	Jackson
Parish, Effie A	Riley
Parish, Ella A	"
Parsons, Mildred B	Kansas City, Mo.
Pechner, Lizzie M	Riley
Phillips, Anna	"
Platt, George L	"
Platt, Hattie M	"
Pound, Byron H	Riley
Pound, Isabella B	"
Proctor, Belle A	Linn

Proctor, John C	Linn
Records, Francis A	Howard
Reed, Almeda J	Davis
Richmond, Corydon S	Sedgwick
Richmond, Gustavus A	"
Richmond, Irving	"
Riley, Lizzie M	Riley
Rogers, Julia F	Osage
Rogers, Louis B	Dickinson
Rushmore, Henry C	Jefferson
Russell, Charles N	Tierra, New Mex.
Sawyer, Nellie	Franklin
Sherman, Marcus	Brown
Shinkle, Ezra M	Linn
Shuemaker, Simon C	Nemaha
Sikes, Melva E	Pottawatomie
Smith, Henry	Osage
Smith, Mary B	Linn
Stewart, Albert A	Labette
Stewart, Alice E	Riley
Stone, Wm S	Butler
Streeter, Abbie J	Riley
Streeter, Chas A	"
Todd, Irving	"
Titsworth, Wilbur H	Atchison
Ulrich, Edwin H	Riley
Ulrich, William	"
Viets, Clayton L	Butler
Wake, George A	Clay
Weeks, Abbie C	Marshall
Whitman, Minerva E	Osage
Whitney, Genevieve	Riley
Wilkin, Frank H	Sedgwick
Williamson, Joseph E	Royal Center, Ind.
Williston, Carrie	Riley
Winne, Ella M	"
Young, Willoughby	Davis

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

TOPEKA, KANSAS.

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THE COLLEGE FARM

Keeps constantly on hand and for sale, specimens of

SHORTHORN, LANCASHIRE,
JERSEY, BERKSHIRE,

AND
ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address, **E. M. SHELTON, Sup't Farm.**

COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, MAY 15, 1875.

No. 4.

THE INDUSTRIALIST.

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BY THE

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Advertisements of less than ten words to be counted as having ten words.

Displayed advertisements at ten cents per nonpareil line of space occupied. Address,

A. A. STEWART, Manhattan, Kansas.

The Industrialist.

The INDUSTRIALIST is issued, in part, to afford the members of the printing classes of the Agricultural College regular drill in the work of printing and publishing a weekly newspaper; in part, to epitomize current events for the benefit of its student readers; in part, to photograph the work of the several departments of the Agricultural College, for the information of its patrons and the people; in part, to discuss the educational system and methods of Kansas from the stand-point of the rights and necessities of the industrial classes; and, in part, to contribute such practical facts of science as may increase the profits or pleasure of the farmers, mechanics, and business men and women of Kansas. In other words, it proposes to say and do those things which may properly and naturally be said or done by persons engaged in the daily routine of an Institution created by the Nation, and guided by the State, "to promote the liberal and practical education of the industrial classes in their several pursuits."

Forage Plants in Kansas. No. III.

BY PROF. E. M. SHELTON.

KENTUCKY BLUE GRASS.

In respect to nutritive value blue grass ranks beneath timothy, and indeed with the lowest of the grasses. But from its abundant growth both early and late in the season, its dense habit, and especially for its ability to withstand the effects of drouth, it is to the west and south-west, the most valuable of all grasses for pasturing. It is not, however, without value for mowing. When cut just before the seeds have ripened it makes hay which is greatly relished by cattle. In respect to quantity it is inferior to timothy or clover, a ton of blue grass being considered a good yield.

A dry, warm, calcareous upland is best suited to the growth of blue grass. In Kentucky the finest pastures are obtained in old parks and orchards, or other lands that are partly shaded.

It can hardly be denied that blue grass is to be to Kansas farmers, as it is, to the farmers of Illinois and Missouri, the great pasture grass. No other grass promises so well to occupy the place of the ordinary grasses of the prairie. Its superiority over the native grasses for early and late feeding is already well understood, and the experience of the past season seems to show that it is equally well adapted to our dry summers. It has already been introduced west

of the center of the State, and in no case have I heard of its failing, or materially injuring from the protracted drouth of 1874. Upon the college farm we have more than an acre which by way of experiment was sown upon a very dry and exposed position. Immediately after the warm weather of last year had abated it began to show signs of vigor, and soon after the first rain it formed the thick and brilliantly blue-green carpet for which this grass is so celebrated.

It seems to be generally acknowledged that where a stand is once obtained no further difficulty need be expected. The real work is in getting the start. Those who suppose this difficulty to be peculiar to the soil and climate of Kansas will do well to bear in mind that, even in Kentucky, at least two or three years are required before the grass becomes well set, and its full perfection as a pasture grass is not attained until the sward is older than that. For this reason blue grass does not belong with the rotation grasses. It is best adapted to permanent pastures and those lands which are to be laid down a number of years.

SEEDING.

It has sometimes seemed to me that the less one knew of eastern methods of farming, the better would be his chances for success in Kansas. The novice would certainly have less to unlearn than the adept from the east. In nothing is the worthlessness of eastern data, when applied to Kansas, seen more strikingly than in the matter of seeding. Eastern farmers sow the seed upon the late snows early in the spring, and Kansas farmers have very generally adopted the same practice. I am satisfied that a very large share of the failures made in attempting to grow blue grass, are attributable to this practice. Thoughtful farmers must see that winds which frequently carry away the surface of entire fields to the depth of an inch, will carry away buoyant seeds like those of the blue grass, when left upon the surface of the ground. The common charge is that seed procured east, is usually worthless. I am inclined to think that this is less true than is generally supposed. During the present season, I have carefully experimented with some specimens of seed procured from St. Louis firms; seed that was covered with mould, and had a very suspicious look; yet fully nine-tenths of this germinated, and made a vigorous growth.

While a partial "catch" will often be obtained where the seed is sown among the prairie grasses, blue grass will abundantly repay a more careful preparation of the seed bed. Let the ground be well prepared, and the surface made fine with the harrow. Upon this sow fully $1\frac{1}{4}$ bushels of clean seed per acre, and harrow in thoroughly, following with the roller. If seasonable rains follow, or the ground is moist, the fine delicate sprouts will be seen in a few days.

No stock should be allowed upon the land the first year, nor until late the following season. Where this course is pursued failures need be apprehended only during exceptionally severe seasons.

Boiled Down.

Solomon City glories in its salt works.

Symptoms of a lead mine at Fort Scott.

Wilson county is shipping cows to Ohio.

Coffeyville has 178,000,000 worthless dogs.

Western rivers are to be stocked with shad.

Ponds frozen at Springfield, Illinois, May 2d.

Salina proposes to be the State Capitol in 1880.

Leavenworth rescued 1,000 cords of drift wood.

Ice delivered in Emporia at half a cent a pound.

Kansas will have a good place in the Centennial.

Jewell City will bore 1,000 feet for artesian water.

Three quarters of Missouri fall wheat destroyed.

The sale of postage stamps last month was \$3,600,000.

Crops and cattle flourishing in the Northern counties.

A pound of silver is worth \$18, and of platinum \$115.

Doniphan county raised a large crop of hemp last year.

A heavy immigration up the Solomon valley this year.

The Kansas Pacific is the best route to the Black Hills.

Peaches not seriously injured by late frosts at Emporia.

Junction City trees farther advanced than those of Topeka.

America owns one-third of all the steam power of the world.

In the Ohio spelling schools women beat the men five to one.

The late flood damaged 175 miles of the Union Pacific railroad.

The increased acreage of winter wheat in Kansas is thirty per cent.

Gen. Van Vliet announces a rich mine of platinum in the Black Hills.

The Miami county cheese factory pays eight cents a gallon for milk.

Drouth, chinch bugs and frost have destroyed two crops in Kentucky.

A telegram from Leavenworth to Europe costs seventy cents a word.

The Junction City & Ft. Kearney railroad is to be extended to Concordia.

On the first of May wheat eighteen inches high was exhibited in Topeka.

Wheat "knee high" and rye "heading out" in Sumner county last week.

Eleven Grangers plowed the corn ground for a sick brother in Sumner county.

Fifteen hundred "emigrants to California" came back on the K. P. last week.

A Marion county club reports favorably on blue grass, alsike clover and alfalfa.

Out of 1,100 trees planted west of Ellsworth three years ago only a dozen have died.

The Wyandotte Gazette states the immigration into Kansas to be unprecedented.

The area of the school lands of Kansas is greater than that of the State of Connecticut.

The Chronicle announces the extension of the Carbondale railroad to Burlingame this year.

The removal of the military depots from Fort Leavenworth to Fort Riley is under discussion.

Massachusetts, Kansas, Utah, California and Washington Territory report discoveries of gold.

Council Grove boasts the strongest salt brine yet developed, and a nine foot stratum of gypsum.

As many persons now reach seventy years of age, as three hundred years ago lived to forty-three.

An Anderson county farmer saved 1,100 fruit trees from rabbits, borers and bugs, by using soft soap.

Alfalfa planted in Sumner county last May, withered by drouth and devoured by hoppers, is now a foot high.

With the same population, Germany adds 500 and America 3,000 per year, to the stock of doctors. Undertakers don't get rich in Germany.

THE INDUSTRIALIST.

SATURDAY, MAY 15, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Arsenical Wall Papers.

That arsenic is a deadly poison, is a fact which will be admitted by all; that it cannot be taken into the animal system without producing the most serious consequences, will be readily conceded. It makes no difference how arsenic enters the system, whether it is taken directly into the stomach, is inhaled, or absorbed through the skin, it exerts a very deleterious influence upon the human system. Yet people as a rule never seem to be happy unless they can have wall paper that contains a large amount of green coloring matter, either on the great mass of the paper or else on the border. The green colors generally used for this purpose are Schweinfurt's, Scheele's, or Paris greens, the basis of them all being arsenic. To say nothing of the bad taste of putting paper of a bright green color on the walls of a room, it is highly objectionable on the score of health.

This green coloring matter is held on the paper by a thin size. By the alternations of heat and cold this size becomes loosened, and the arsenical green floats in the air to be inhaled at every breath. As a consequence serious disturbances of the system ensue. A person living in a room the walls of which are covered with paper containing arsenic, is frequently troubled with headache, becomes pale, languid, troubled with rheumatic pains, and sometimes goes into a decline. The physician calls it a "bilious" attack; while the fact is that the person is suffering from poison by arsenic, the same as if it had been taken into the stomach directly.

The danger to health and life from this source is a real one. It does not exist in our imagination. There are many cases on record of persons who have died from the effects of inhaling dust from wall-paper colored with arsenic. Actual analysis has shown that these papers frequently contain as much as four grains of arsenic to the square foot, and that dust which has settled on furniture in rooms whose walls are covered with arsenical paper gave characteristic reactions for arsenic. Beware of this poisonous paper as you would of a bottle labeled "arsenic," and embellished with the "death's head and cross bones!"

To test the presence of arsenic in wall paper: Arsenic is soluble in ammonia. Pour on the paper to be tested a few drops of ammonia, and if arsenic is present the color will be discharged. Upon pouring the ammonia from the paper on a clean slip of glass, and placing in the solution a piece of lunar caustic, the presence of arsenic will be shown by a bright yellow precipitate.— [Prof. R. K. Kedzie.

Butter and Cheese in Kansas.

While Kansas will always rank pre-eminent among the stock-raising and grain producing states, there is no reason why the manufacture of butter and cheese should not become a prominent industry.

Both butter and cheese of excellent quality are, to some extent, made in Kansas. But they are not always to be obtained. The home supply of cheese is not equal to the demand. Large quantities are annually imported from Ohio and New York and retailed at 25 to 30 cts. per pound. During the winter months, the inhabitants of each considerable town in the State are obliged to pay large prices for butter, often of an inferior quality, and frequently there is none in the market.

Very few Kansas farmers rely on either butter or cheese as articles of profit. The attention of those who desire to make farming pay in the future better than it has in the past, is called to the following facts and figures :

Taking the highest quotation of wheat, corn, and butter, recent market reports show their comparative money values to be as follows :

In Kansas City,
4½ lbs. butter are worth one bushel of wheat.
2 9-10 lbs. " " " " " corn.

In St. Louis,
 $\frac{42}{3}$ lbs. butter are worth one bushel of wheat.
 $\frac{22}{3}$ lbs. " " " corn.

In Galveston,
4½ lbs. butter are worth one bushel of wheat.
27-9 lbs. " " " " corn.

In Denver,
4½ lbs. butter are worth one bushel of wheat.
4 lbs. " " " " corn.

Taking for illustration, Denver as the market, and Manhattan as the shipping point, we find from the above comparison that 60 lbs. of choice butter will bring in the Denver market, \$20.40; freight on the same \$1.20. A bushel of wheat will bring \$1.50, one of corn \$1.35; freight on the grain, 42 cts. per bushel, by the car load. At the present unusually high prices of corn and wheat, for every \$100 that Denver pays for corn \$31.42 goes to the carrier, leaving \$68.58 for the shipper; for every \$100 paid for wheat, \$28.00 goes to the carrier and \$72.00 to the shipper; while for every \$100 paid for good butter only \$5.88 is paid to the much abused railroad, leaving \$94.12 for the shipper, who might also be the producer.

Choice butter is never a drug in any market, either west, south, or east.—[Prof. Ward.

Tent Caterpillar.

Where the eggs of this injurious insect have not been removed from the fruit trees, the young caterpillars which are already making their appearance should at once be destroyed. In the fall of the year, the female, a nocturnal moth, deposits a belt of several hundred eggs, usually within five or six inches of the extremity of a growing twig; these are covered with a water-proof varnish-like substance, and pass through our

severe winters without the slightest injury from rain, snow, and frost, and hatch in the spring almost as soon as the leaves make their appearance. In winter and early spring, while the branches are bare, the egg belts are easily discovered and readily removed from dwarf trees by the hand. After the eggs are hatched, the little socialists construct an angular tent near the place of their birth, into which they retire in the evening, in the middle of the day, and in stormy weather. By taking advantage of this habit, the caterpillars are easily destroyed by clipping the twigs to which their common habitation is attached, and crushing the insects under foot. At present an orchard can thus be rid of these pests in a few hours, and this repeated once or twice through the season will save much mortification and disappointment.—[Prof. Whitman.

A gentleman informed us that he had set out a good many tomato plants, and that to save them and his melons and cucumbers from the frost he used every kind of covering he could find that would serve the purpose, and that he was astonished to find, on Sunday morning, that every plant that he had covered with any kind of iron vessel was killed, while those which were covered with tin or wood were all right. One of his neighbors testified to the same experience. They would like to know why the iron covered plants were killed. Will somebody rise and explain?—Emporia Ledger.

The explanation is probably this: Iron is a good absorber and a good radiator of heat. Iron vessels being colder than the plants or ground over which they are placed, the heat is radiated towards them and absorbed, and radiated again into space. As a consequence the air under the iron vessels soon becomes as cold as the outside air. With tin and wood, the reverse is the case. They being poor absorbers and poor radiators of heat, the result is the air under them does not become sufficiently cool to freeze plants.

Utilized Egg Shells.

In order to obtain early vegetables and flowers, and to avoid checking their growth by transplanting, a lady in the vicinity of Emporia plants the seed in egg shells, and when the plants are large enough to set out, she takes up the plants with the egg shells and sets them out without disturbing the roots. For this purpose she saves the shells of all the eggs she has occasion to use in the early spring. It is one of the best plans we have heard of for the transfer of plants from the house or hot-bed to the garden.—Emporia Ledger.

Good. What can be better? Besides, there is no patent on it.

The awarding of the contracts for the new building finally decides the fact that we shall hereafter have room enough for the instruction of at least three hundred students; and as the work is to be finished by the 15th of August, the next session will probably be opened in more commodious quarters.

THE INDUSTRIALIST.

SATURDAY, MAY 15, 1875.

The extra issued herewith was set up by the elementary printing class.

Every man in these counties would find it profitable to take the NATIONALIST, as very many do.

E. T. Carr has been employed by the Regents as architect, and no better selection could have been made.

We acknowledge an excellent serenade from the excellent Manhattan brass band, one of the best in the State.

The Board adjourned to meet May 22, at 8 P. M. Regents will take due notice and govern themselves accordingly.

The members of the entomology class are out every day fishing for bugs—with great success. Business.

Go to the Bazar for Millinery, Music, Gloves, Hose, Balls, Bats, and every thing else. Lowest prices; no misrepresentations. (3-5.)

Rev. Mr. Wake will deliver a lecture before the Young Men's Christian Association, on Sabbath evening, May 23d, at the Presbyterian Church in Manhattan. Subject: "The Educated Man."

We regret to learn that Hon. Josiah Copley, for a long time a Regent of this Institution, is not in good health. He passed through town on his way to Colorado, and we trust will return much improved.

We were very happy to receive a call from our big brother of the big NATIONALIST, A. Griffin—one of the best editors and truest men in the State. He is the first of the fraternity who has visited our sanctuary, but we trust not the last.

We have spliced four long pencils together and climbed upon the the tallest tripod, placed in the fourth story, to record the luminous pride with which attention is called to the articles furnished by the editorial staff of the INDUSTRIALIST. So far from having to furnish copy, the chief function of the managing editor is to grasp one end of the paper and brace against the pressman holding the other end, while the two stretch the sheet to make it hold more matter—and then it won't always do it!

The proposals for re-modeling the barn and erecting the mechanical work shop were opened last Thursday, and the awards made to the lowest bidders. Jacob Winne has the contract for the stone work, and S. Rains for the rest. The aggregate of the contracts is a very little less than the \$7,500 appropriated by the Legislature. We doubt if the State has ever made a better contract. Bids were received from Atchison, Leavenworth, and Topeka. Work will be begun next Monday. As soon as the cuts are ready we will publish the plans.

Information is wanted respecting the whereabouts of our "Business Manager." When last heard of he had married a beautiful lady, gone to Texas as Secretary of the Editorial Excursion—probably on account of his relation to this paper—returned, and struck out towards Sumner county. Some of these days, that pestiferous set of nuisances known as "creditors" will be buzzing around with little bills and, simply as a benevolent accommodation to them, we would like to know his last post-office address. Topeka, Denison and Galveston, won't last them more than ten days, and a new batch of places to which they can write will be a convenience.

The mastodon's tooth found on the farm of Mr. Chase, on Humboldt creek, Davis county, and presented to the College by Capt. B. Rockwell, of Junction City, arrived safely. This tooth with other bones of the animal were found nineteen feet under the surface; its dimensions and surface show it to have belonged to an old animal of large size. The mastodon on account of his great weight often became mired in bogs, as it would seem from the standing position of skeletons found some distance under the surface. One taken from a marsh near Newbury, was eleven feet high and seventeen feet long, with tusks twelve feet in length, two feet of

which were inserted in the sockets. When alive the animal must have been at least twelve feet high and twenty-four feet in length including tusks. The undigested food found where the stomach had rested shows that his last meal consisted in part at least, of the branches of the spruce and fir tree. Mastodons and gigantic elephants were once common in Kansas. Capt. Rockwell will accept our hearty thanks.

Term Examinations.

The present session closes Wednesday, May 26th. The examinations will begin Monday, 24th, and will be held at the hours named in the following programme:

HOURS.	MONDAY.	HOURS.	TUESDAY.	HOURS.	WEDNESDAY.
2-4	Arithmetic and Book-keeping, Class "B." Telegraphy.	2-4	Printing. Drill in English.	2-4	Algebra, Class "A." Arithmetic Class "A." Phonography.
11-1	German. Geometrical Drawing. Analytical Chemistry.	11-1	Vocal Music. Algebra, Class "B." Modern History.	11-1	Horticulture. Scroll Sawing and Tuning.
10-12	Music, (Organ.) Carpentry and Cabinet Making.	10-12	Botany. Carpentry and Wagon-Making.	10-12	Geometry. Latin. Botany.
9-11	English Grammar. Physics.	9-11	U. S. History. Mechanics.	9-11	Blacksmithing. Instrumental Music.
8-10	Practical Agriculture. Moral Philosophy. Printing.	8-10	Entomology. Analytical Chemistry.	8-10	Rhetoric. Free Hand Drawing.

Owing to the sickness of Mrs. Cheseldine, there will be no extended examination of the Sewing classes.

The patrons of the College in particular, and the public in general, are most cordially invited to attend.

FARM ITEMS.

The arrangement of the College farm for the present year, with reference to cropping, is as follows:

Wheat, winter...	20 acres.	Mang'd Wurzel	2 "
Corn.....	26 "	Peas.....	1 "
Oats.....	26 "	Timothy, Clover	16 "
Barley.....	6 "	Alfalfa.....	2 "
Millet.....	10 "	Summer-fallow,	12 "

Pure bred cattle belonging to the College: Short-horns, 7 head; Devons, 5; Jerseys, 4; Galloways, 2.

Pure bred swine: Berkshires, 7 head; Essex, 2; Lancashires, 8.

HORTICULTURAL ITEMS.

Have finished planting stocks.

Trees too far advanced for transplanting.

Apple and pear grafts are coming forward finely. They never promised better than now.

Are now removing dead and injured trees from the apple nursery. We find many more of the two and three year old injured than we anticipated earlier in the spring. It is now a question whether it would not have been the better policy to put the entire mass upon the brush heap early in the spring.

Have just seen a number of quince trees near Ft. Scott, surrounded on all three sides with a very dense protection, which are perfectly healthy and laden with an abundance of bloom, while trees outside this protection have not done well. Do quinces require such a protection here, or is it accidental? Who can tell?

Last year the Commencement exercises were held in Manhattan rather than on the Hill, for the greater convenience of the audience; and in the Presbyterian church, it being the largest building. The arrangement suited so well that it will be followed this year.

The Baccalaureate sermon will be delivered by President Anderson, in the Presbyterian church, Sabbath, May 23d, at 3 P. M.

In the evening, and at the same place, a lecture will be delivered before the Young Men's Christian Association, by Rev. Wake, Pastor of the Methodist Episcopal Church.

The examinations will be held in the College, as herewith announced, from 8:30 A. M. to 4 P. M. on Monday, Tuesday and Wednesday.

The under-graduate's exhibition will be given in the Presbyterian Church, Tuesday evening, 7:30 o'clock.

On Wednesday evening, at the same time and place, the orations of the graduating class, the delivery of diplomas, and the annual Address before the College, by Noble L. Prentiss, will be had.

Student's Column.

Answer to Enigma No. 2.—In-dus-tri-al-ist.

The students propose having a picnic and jolly time to-day, down on the Wild Cat.

Mr. Shuemaker and Miss Sikes go with the "old folks" of Manhattan to Wamego next Thursday evening. Their part is to vex the "Professor at Home." They can do it.

The Websters hold a moot-court this evening. A sues B for house rent due him, and for damages otherwise incurred. B says that A did not fulfill his part of the contract, therefore he does not propose to pay him.

Last Saturday, a few of the students concluded to have a buggy ride and dinner in the woods. The little company of ten arrived at Ft. Riley about noon, and, after gazing rapturously upon the soldiers, inspecting the new buildings, and romping over the grounds generally, had their picnic, which, by the way, indicated that the ladies knew how to "dish it up." After exploring Junction City and the country around about, the party returned.

Last Friday afternoon the Bluemont Base-ball Club of the Kansas State Agricultural College, went to Randolph for a match game with the Clippers of Blue Rapids, and this is what they said on return: That the drive was delightful; that the Clippers were perfect gentlemen and had some capital players, but not enough to win this time; that, not to put too fine a point on it, the aforesaid Bluemonts had not as yet been beaten and didn't propose to be—if they could help it; that the Clippers were a real jolly lot of fellows; and finally that the score of the game was:—

BLUEMONT.					CLIPPERS.				
PLAYERS.	R	L	B	O	PLAYERS.	R	L	B	O
Kehoe, p.....	9	0	4		Fisher, s.s....	1	0	3	
Pound, 1b....	8	2	3		Benidict, c..	2	0	2	
Griffing, 2b.	11	1	1		Fowler, 1b..	2	0	2	
Platt, s.s....	9	0	4		Craft, r f....	0	1	2	
Burnham, c	11	0	2		Hamilt'n, 2b	0	0	4	
Rollins, 3b..	9	1	3		Mussey, 3b..	0	0	4	
Crouse, r f	9	1	3		Goen, p.....	0	0	4	
Ulrich, 1 f	9	2	1		Spencer l f...	1	0	2	
Howard, c f	8	1	3		Mortimer rf	1	1	1	
Totals.....	83	8	24		Totals.....	7	2	24	

INNINGS.

CLUBS.	1	2	3	4	5	6	7	8
Blue Mont....	0	0	6	16	10	8	34	9
Clippers.....	1	3	0	0	0	2	0	0

Umpire, Samuel Kimble. Scorer, W. S. Fraunberg. Time of game—4 hours and 20 minutes.

S. M. FOX,
BOOKSELLER and STATIONER,
Dealer in

Fine Stationery, Pocket-Books,
Envelopes, Gold Pens,
Blank Books, etc.

No. 127, Poyntz Avenue, Manhattan. (3-7.)

THE INDUSTRIALIST.

SATURDAY, MAY 15, 1875.

Council Grove Salt.

A visit to the salt works the other day convinced us that the vein of salt water from which the company are manufacturing salt is very nearly pure. The company have provided three kettles and a small furnace, and have no trouble manufacturing a very fine article of salt. They contemplate procuring, at an early day, from twenty-five to fifty kettles, and going into the manufacture in earnest. Parties who have visited Albia pronounce the saline water of our well much the purest and strongest. The salt made here is of a whiter and better quality. Now, all we need are the facilities for manufacturing in unlimited quantity. The demand for the commodity is constant and unceasing, and an ability to supply all demands will afford a handsome revenue for our friends who are engaged in the development of the saline deposits that exist in the earth in this vicinity.—Democrat.

The Wagener Apple.

BY PROF. E. GALE.

This apple originated in Pen Yan, Yates Co., New York, from seed brought by Mr. George Wheeler from Dover, Dutchess Co., New York. The original tree was planted by Mr. Abram Wagener upon his farm in 1796. This tree continued to produce bountiful crops of delicious fruit for seventy-four years. This variety has always been highly

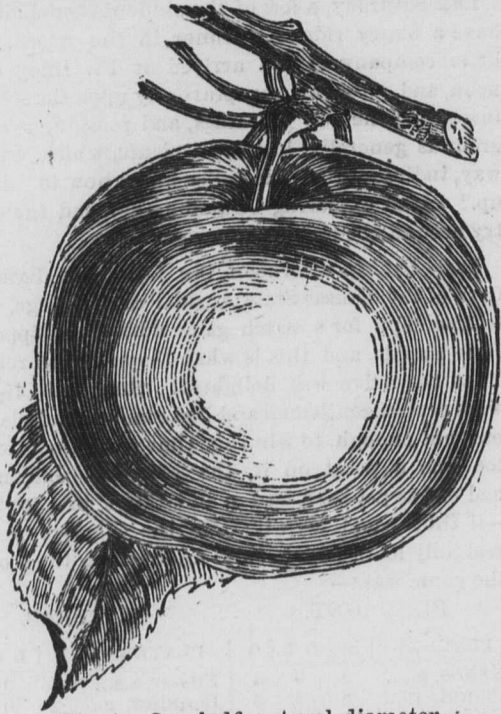


Fig. 1. One-half natural diameter.

esteemed wherever known. Mr. Charles Wagener, of Pen Yan, says: "I have in my orchard trees that I set out in 1838, being thirty-five years old, which are large and thrifty. I have picked in one season, from single trees, thirty bushels of fair and handsome apples. The fruit hangs upon the tree with great tenacity, and can all be utilized. It is one of the best culinary apples we have." It is an early and prolific bearer. It is a very tender, juicy, and somewhat vinous apple; and is regarded by Mr. Downing as very good to best. It is recommended by the Kansas State Horticultural Society for cultivation in Kansas. The fruit ripens from November to February; and in New York, with extra care, is made to keep until summer apples are fit for use. Mr. Wagener places it, for profit in New York, before the Baldwin, Greening, Seek-no-fur-

ther, Bellfleur, Spitzenberg, Peck's Pleasant, Tallman Sweet, Swaar, Tullpehocken, and White Winter Pearmain; but whether the Wagener will hold so prominent a place

among our best apples in Kansas, experience alone will decide. I shall be glad to hear from any one who has given it a fair test in Kansas soil.

Those who purpose to plant the Wagener should note closely its perfectly unique form as represented in Fig. 2, which is a copy of a tree eight years from the graft. The

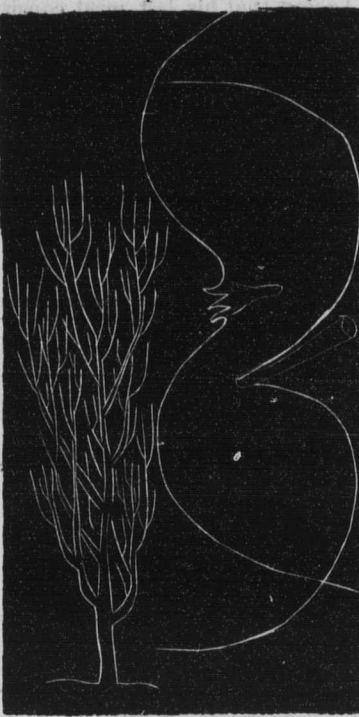


Fig. 2.

dwarf habit and upright form will PERMIT and, perhaps it might be said in view of the marked features of our climate, DEMAND closer planting than is usually given it.

Upon the cut are also represented the base and cavity of the apple.

The Farm Blacksmith Shop.

A well appointed blacksmith shop for farm work can be procured for about fifty dollars. This may consist of a portable forge, an anvil, a vice, and the usual hammers, tongs, etc., which form the kit of tools. With these the farmer may make a bolt, or a nut, or mend a chain, or do any of those small repairs which are continually needed upon the farm. Now that machinery is coming into such extensive use, the means of repairing any trifling break, or replacing a lost bolt or nut, must of necessity be at hand. To have a mower, a reaper, or a threshing machine, break down when the hurry of the work is the greatest, may frequently occasion a loss equal to a large portion of the cost of the appliances for making an immediate repair at home. We have known a farmer, in such a case, to mount a horse and ride several miles to get a bolt made, that could be made at home in ten minutes, if the means were ready; meanwhile a dozen men and eight or ten horses were idle for half a day. The same will apply to country mills, both saw and grist mills, which are often disabled for half a day or more by some trifling mishap, the real cost of which is nothing as compared to the indirect danger of delay.—American Agriculturalist.

We are pretty hard up here in Kansas, but the trouble is we have nothing to sell. If we had plenty of wheat, corn, oats, potatoes, hogs, cattle, sheep, wool, &c., to sell, we should have no trouble for money. And doubling the volume of the currency would not add a hoof of stock nor a pound of grain to our store. These things are not ground out by the government rag mill; they are the product of labor.—Lawrence Journal.

There is no better soil for the growth of forest trees in the United States than in Kansas, says the Courant of Chase county, and then by statistics proves it.

The Kansas Farmer of the last week says: "A friend doing business in Iowa, who has lived in Kansas, called upon us a day or two since and says that at Burlington, Iowa, the ground has been frozen 6½ feet deep the past winter, and that many people who are entirely satisfied with the soil of Iowa are looking toward Kansas as presenting a milder climate, and that many will come as soon as our drouth and grasshopper trouble has passed away. He says the winter wheat has been killed out, and but little spring wheat yet sown. A letter from Eastern Pennsylvania says the fall wheat is winter-killed in that locality. Northern Ohio seems to have suffered in the same way, as also, parts of Michigan and Indiana."

Alexander Stephens says the next President will be an editor. That may be, but he's not going to seduce us into setting up our paper in solid nonpareil by such talk as that.—Coffeyville Courier.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

TOPEKA, KANSAS.

Papers Pamphlets, and Books neatly bound.

THE COLLEGE FARM

Keeps constantly on hand and for sale, specimens of

SHORTHORN, LANCASHIRE,
JERSEY, BERKSHIRE,
AND
ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,

E. M. SHELTON, Sup't Farm.

COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,

Agent for sale of College Lands.

The Nursery.

Very few shrubs or plants escaped the attacks of the locusts last year. The ruin is so general that there are only a few articles which we can offer for Spring planting. We offer

Apple Trees at \$6.00 per hundred.

A few Leib Cherry at 50 cents each.

Austrian Pine, Mountain Pine, and Pitch Pine, 50 to 75 cents each.

A few Large Red Cedars.

Ailantus, 2 years, \$2.00 per hundred.

Ash Green, 2 years, \$1.00 per hundred.

Large shade trees for streets,—**Elm, Maple, Box Elder, Ash**, (both green and white,)—at 25 cents each. Address,

E. GALE.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, MAY 22, 1875.

No. 5.

THE INDUSTRIALIST.

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Displayed advertisements at ten cents per nonpareil line of space occupied. Address,
A. A. STEWART, Manhattan, Kansas.

The Industrialist.

The INDUSTRIALIST is issued, in part, to afford the members of the printing classes of the Agricultural College regular drill in the work of printing and publishing a weekly newspaper; in part, to epitomize current events for the benefit of its student readers; in part, to photograph the work of the several departments of the Agricultural College, for the information of its patrons and the people; in part, to discuss the educational system and methods of Kansas from the stand-point of the rights and necessities of the industrial classes; and, in part, to contribute such practical facts of science as may increase the profits or pleasure of the farmers, mechanics, and business men and women of Kansas. In other words, it proposes to say and do those things which may properly and naturally be said or done by persons engaged in the daily routine of an Institution created by the Nation, and guided by the State, "to promote the liberal and practical education of the industrial classes in their several pursuits."

Boiled Down.

Chetopa has a public library.
Wichita is sinking a coal shaft.
Audubon's library has been burned.
Jerusalem has two telegraph lines to Europe.
Ice delivered in Emporia at half a cent a pound.
Canada wants to be taken into the Union, and out of the cold.
The Japanese have just celebrated their 2,535th anniversary.
The Junction Union is fourteen years old, and sassy accordin'!
An old settler reports grasshoppers in Kansas in 1857-59-66-74.
The Miami county cheese factories pay eight cents a gallon for milk.
Drouth, chinch-bugs and frost have destroyed two crops in Kentucky.
Montgomery county is receiving a large immigration from California.
Kansas would make thirty-nine Delawares, and sixty-three Rhode Islands.
Blue Rapids claims to manufacture the purest and best plaster of Paris in the world.
Fifteen hundred "emigrants to California" came back over the Kansas Pacific last week.
Massachusetts, Kansas, Utah, California, and Washington Territory report discoveries of gold.
The Waterville Telegraph wants Leavenworth to pickle the bridge and send it to the Centennial.
Junction City has just finished a dam, a new grist mill, a cheese factory, and opened a boot and shoe factory.
In cases of extreme weakness, blood has been successfully transferred from the veins of the healthy to those of the sick person.
T. C. Henry, of Abilene, refused \$10,000 cash for his fifteen hundred acres of wheat, and will sow twenty-five hundred acres next fall.

Can we Expect Profitable Results from Fruit Culture in Kansas?

[A Paper read by Prof. Gale before the Manhattan Horticultural Society, May 12th, 1875.]

To a live Kansan this would have been a strange question one year ago. But as we look over the disasters of the past year some of us are more or less in doubt. We have, in some parts of the State, seen much to discourage, and we are hardly in a proper frame of mind to measure the promises of success. If all our experience of the capabilities of Kansas was confined to the year 1874, we certainly should have little to hope for in the future. But we already know enough of Kansas to regard the trying experiences of the past year, in the extent and completeness of its disasters, as exceptional. It is also worthy of note that the fearful misfortunes of 1874 were very much increased by the fact that our orchards were generally young. The older the apple orchards the less have they suffered, as a rule. If we examine trees that are twelve or fifteen years old we find them very slightly injured. Such, for example, is the case in Mr. Line's orchard, planted in 1860. The same is true in other orchards. This is a fact which should be well considered by the disheartened class, for it is to be remembered that in our eighteen or twenty years' experience in Kansas, there has been no year which equaled, in the severity of trial, the year 1874. Now, if our orchards had been planted five or ten years earlier, it would have been hardly possible for us to have suffered as we have. We know from this fact and others which we have not time to mention, that many of the disasters of the past year, grew out of the comparatively recent settlement of the State, and many of them also out of our want of experience in such an emergency. For example, could we have foreseen the effects of defoliation upon the exposed trunks of our fruit trees we could have prevented by wrappings of some kind the sun-scald, and to a large extent the subsequent work of the flat-headed borer.

Small fruit and shrubbery could have been saved in many instances by similar appliances. If such emergency should again occur we shall doubtless be better prepared to meet it. Thus much it seemed necessary to say in relation to the experience of the past year, in clearing the way for the consideration of the claims of Kansas as a fruit-growing State.

PROFITS OF FRUIT CULTURE IN OTHER STATES.

We know that fruit culture under favorable circumstances is a profitable employment, and will rank fully up with any other of the great agricultural pursuits of the land. In the great fruit regions of this continent land covered with bearing orchards has become exceedingly valuable. Some of this land in western New York is held at a thousand dollars per acre and is reasonable at that price. Two years since there was sold from nineteen acres of orchard in Niagara Co., N. Y., \$7,230 worth of apples. From another orchard, consisting of one hundred

and forty Baldwin trees, there were sold nine hundred and eighty barrels of apples at \$3.25 per barrel; or \$3,185 from an orchard which would occupy three or four acres of land.

Pear culture in western New York is equally profitable. We find upon the sixtieth page of the Horticulturist for the current year the history of a pear orchard owned by John Taylor, of Elba, N. Y. For six years after planting, this orchard yielded no fruit. For the four subsequent years the proceeds of the orchard are stated below. Amount of land, three acres:

Cost of trees,	\$500 00
Preparing ground and setting trees,	200 00
Interest upon the same for ten years,	490 00
Total cost of orchard,	\$1190 00
Income the seventh year,	\$ 200 00
" eighth "	1080 00
" ninth "	1100 00
" tenth "	1122 00
Total income,	\$3502 00
Actual profit,	2402 00
Profit per year,	240 20
Profit per acre for the ten years,	80 06

During all these years potatoes have been grown between the rows of trees and have more than paid the cost of cultivation. Besides this it is to be remembered that the orchard has just begun to bear, and the profits will probably be much greater for years to come.

A case came to my knowledge in Illinois where, a few years since, the fruit upon a young orchard of eighty acres was sold upon the trees for \$5,000, that is \$62.50 per acre.

PROFITS IN KANSAS.

These results are not attained without intelligent selection and culture. Our experience in fruit culture here in Kansas is short, but we have even now some facts which will compare well with the above. For example take the following: In 1872 twenty Wine apple trees ten years old yielded two hundred bushels and sold for \$1.00 per bushel. The same year twenty Winesaps, twelve years old, yielded two hundred bushels and sold on an average for \$1.50 per bushel, or \$15.00 per tree. In 1872 fifty Genets yielded two hundred and fifty bushels, at twelve years old, and sold for \$1.75 per bushel; and in 1874, fifty Genets yielded five hundred bushels, and sold for \$1.00 per bushel. In the latter case the grasshoppers ruined fully one-half the crop. Three hundred cherry trees, Early Richmond, yielded in 1874 three hundred bushels of cherries, which sold at \$3.00 per bushel. The above facts are reported by G. C. Brackett, Esq., Douglas Co., Kansas. These can be substantiated by others gathered from different sections of the State. But it may be said that these are remarkable results. We shall have reason to be abundantly satisfied even if we fall far below these figures. Such results are not attained without care. They are not the product of chance. But the same intelligent attention to some essential points will bring out the same results in our hands.

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, MAY 22, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The English Language.

It is believed that an article on this subject may not be without interest to the readers of the *INDUSTRIALIST*. Of those who call the English their mother tongue how many know whence or how it originated? It is feared they are few. Its name points to England as its native place. But what means, influences or agencies gave birth to it there? What were the circumstances of its origin? What the processes by which it passed from its first crude elementary state to its present highly developed condition? These and similar questions are full of interest. A familiarity with the subjects suggested by them, invests with new attraction the study of our mother tongue. A few sketches of the history of English will be the subject of this and perhaps subsequent contributions.

The English has gathered its elements from many sources. Its grammatical structure has been inherited almost solely from one language, the Anglo-Saxon, but its vocabulary has been culled from a great variety of sources. Almost every language under heaven has been laid under tribute to increase its wealth. Only a few of those which have paid heaviest tribute will be mentioned.

Among these comes first in order the Celtic, spoken by the Ancient Britons. The Celts were the first known inhabitants of the island now called Great Britain. They loved to trace their lineage back to Old Troy and say that when the Greeks sacked that renowned city, one Brutus with his companions fled thence to the island in the far distant north-west. They settled on it and called it by the name of their leader. All this is probably a fanciful attempt to explain the name Britain. When Cæsar invaded Britain, B. C. 55, he found its inhabitants savages. But the savages resisted Roman subjugation during more than two hundred years. They never were all subdued. The southern half of the island finally succumbed, and with Roman government received Roman civilization and became familiar with the Latin language. But they did not give up the use of their native tongue. It continued to be the language of daily life during all the four hundred years of their subjection to the Romans. Later, when the Roman eagles took flight from the island, and the fierce vultures from the German coast, the Jutes, Angles and Saxons, swooped down upon it, they did what is rarely done by conquerors. They almost extirpated the language of the con-

quered race, and planted in its place their own. But a few words have come down to us from the language of the Ancient Britons. Some antiquarians think there are not over a hundred. They are all words relating to domestic life and occupations, and suggest the thought how closely the home life and habits of those early dwellers in Britain resembled ours.

The following words are traced to a Celtic origin: basket, button, clout or cloth, funnel, gridiron, gown, mop, crock, rail, rug. It will be observed that these are all nouns. But few words belonging to other parts of speech have come down to us from the Britons. But a class of Celtic nouns still more interesting than those just given are found in the proper names of towns, rivers, lakes, mountains and valleys. England is spotted all over with them. Sometimes they constitute the whole name, at others they form but a syllable or two of a modern name. The following examples must suffice for illustration. *Dur*, or *dor*, was the Celtic term for water. This appears in scores of English names such as *Dorchester*, which means the camp by the water; *Derwent*, clear water; *Durham*, home by the water. *Avon* meant a river. Hence we have the name of the stream by the banks of which was born the boy who became England's great dramatist. Shakespeare's native town was *Stratford on Avon*. The same word somewhat changed in countenance is heard in names of the rivers *Inn* and *Inney*, in the west of England. *Esk* also denoted water. It appears in *whiskey*, which means yellow water. It likewise, in modified forms, enters into the names *Thames*, *Exeter*, *Uxbridge* and *Ashbourne*.

Ben, or *pen*, denoted a mountain. Hence the names *Benlomond*, *Bennevis*, *Penrose*, and *Penlaw*. These examples might be greatly multiplied. They illustrate the remark of a recent English writer who says that "Language often adheres to the soil of a country when the race by which it was spoken has been swept from the earth, or driven into the fastnesses of surrounding mountains. The names of rivers, lakes, and mountains often thus become the only monuments marking the graves of extinct nations."—[Prof. Lee.]

Our Neighbors.

"Misery loves company" says the old saw, and whether this be true or not, Kansas farmers will get no harm from the knowledge that agriculture hath its perils in other States than their own.

From nearly every quarter the cry comes that the outlook for the farmer is anything but cheerful. A winter that is unparalleled for its drouth, and a very miracle of frost, has been followed by a spring only distinguishable from winter by a careful reference to the almanac.

In Michigan and Wisconsin, May was

ushered in with a violent snow storm which deposited from four inches to a foot of snow over large areas. Even as far south as Tennessee and Alabama, late and repeated frosts have wrought untold mischief with the fruit buds and wheat. From southern Michigan and northern Indiana, from Ohio, Illinois, and Missouri, the almost unanimous cry is that the winter has been wonderfully severe; the spring unusually backward; and that the fruit buds and winter wheat are badly injured. The California papers mournfully confess that in many of their most prolific valleys the wheat is a positive failure, and the crops throughout the State will fall considerably beneath the average. To complete the picture, we now have a proclamation from the Governor of Missouri appointing a "day of fasting and prayer" that the threatened grasshopper plague may be averted. After speaking of the damage wrought by the late unprecedented winter and spring, Mr. B. F. Johnson, the well known Champaign correspondent of the *Country Gentleman*, in a late number of that paper thus sums up the situation for Central Illinois, "But at the present time the agricultural outlook is gloomy in the extreme, and a doubtful estimate of the future is common to most intelligent and thinking men of my acquaintance. Indeed the whole town and country to-day is in a state of nervous restlessness and apprehension I have never seen equaled."

I know that farmers generally, after feeding their stock through one of these protracted winters, are apt to take a dismal view of things in the spring; but when farmers, newspaper correspondents and the press generally are so nearly a unit, it is safe to conclude that the cry is inspired by something besides "alarm." Where there is so much smoke there certainly is some fire.

In striking contrast with this gloomy picture is the condition of things in Kansas. Our wheat with rare exceptions is excellent and promises more than an average yield. Our stock has passed through the winter with an unusually low death rate. If our spring has been somewhat backward it has been a capital one for farm work, and rains have been timely and abundant.

It is true that we have the grasshoppers, and in some localities their numbers are threatening, but that they will materially damage the crop of 1875 few believe. It has seemed to me that a country whose agriculture knows no such abominable pests as Canada thistles, couch grass, red root, ox-eye daisy, etc., gets no more than its share of drawbacks with grasshoppers quadrennially, or even biennially.

From all that can be seen now it looks very much as though our crops are to be good, and good prices were to be had for them.—[Prof. Shelton.]

THE INDUSTRIALIST.

SATURDAY, MAY 22, 1875.

Work has begun on the new shop.

The INDUSTRIALIST will appear next week.

We forgot to say, 'subscribe for the INDUSTRIALIST.'

The Baccalaureate Sermon of course takes the place of the usual chapel service.

Don't fail to visit the Carpenter shop and inspect the various articles on exhibition and for sale.

A reply by Prof. Gale to an article in the Commonwealth on Shelter Belts is again crowded over.

The Junction Union says that our press work is "simply excellent," which is a deserved compliment to Wm. H. Jenkins.

The Rev. Mr. Wake lectures before the Young Men's Christian Association at the Presbyterian church Sunday evening.

The examinations have not been arranged for the purpose of making those of one day better than those of another. Monday will be as interesting as Wednesday.

Frank Landon, Thos. Midgley, Arthur Merritt, J. E. Williamson, W. S. Fraunberg, Irving Todd, D. A. Beamer, Clay Crouse, W. P. Burnham, Byron Pound, G. A. Richmond, and Edwin Ulrich, are the young gentlemen who have "set up" the INDUSTRIALIST thus far, during their regular practice hours in the Printing Department; and will accept our thanks for their readiness to do any and every thing needed to be done. Several of them have worked at other than regular hours, and Landon especially has placed us under obligations by his patient and effective aid. No paper has a kinder set of typos, and we wish each of them as pleasant a vacation as they have made the office pleasant these past weeks. It will be lonely without them.

Thursday evening a surprise party of students came to anchor at Prof. Lee's residence, and as there were forty-four of them he had just fifty-seven surprises; because, when J. E. Williamson, late in the evening, appeared in the character of spokesman for the rest, he made the fifty-fifth; and when he presented to the Professor twelve elegant volumes of Froude's History of England, Scribner's edition, they made the fifty-seven. That Prof. Lee was deeply touched by this spontaneous and wholly unexpected testimonial; that he said so feelingly, happily and beautifully; and that he greatly appreciated the present, both for its intrinsic and added value, surprised no one who knows him. It was an exceedingly pleasant affair every way.

FARM ITEMS.

Spring grain all in. Corn coming up nicely. Now look out for weeds. Eternal vigilance is the price of corn.

No damage from grasshoppers as yet. The stone wall that surrounds the college farm has proved impregnable, although millions have assaulted it.

Already the work of moving the farm department from the barn has commenced. The new quarters will consist of a comfortable shed 100x30 feet, well provided with stalls, box stalls, granaries etc. Upon the new site water in abundance is found, and altogether the new building will be more convenient and comfortable than the old.

Upon the college farm the milk of Shorthorn, Jersey and Devon cows was recently experimented upon in this wise: First, the first of the milking was placed five inches deep in graduated tubes and allowed to stand twelve hours. At the end of that time an exceedingly thin film of cream was found at the surface of each lot. As near as could be measured the relative amounts of cream were as follows: Jersey, 1; Shorthorn, $\frac{3}{8}$; Devon, $\frac{1}{2}$. Second, the last of the milking, or the "strippings," of each of the same cows, was placed four inches deep in the same graduated tubes and allowed to stand twelve hours as before. The four inches of milk of the Jersey gave 1 6-16 inches of cream; the Shorthorn, 11-16 inches; the Devon, 8-16 inches. The cream of the Jersey would be represented by 22; the Shorthorn, 11; the Devon, 8.

HORTICULTURAL ITEMS.

Pear and apple root grafts never looked finer. Very few live peach trees,—no peaches—no apples—no small fruit.

There will be very little fruit in north-western Kansas this year.

The grasshoppers are upon the grass grounds about

the college farm, but have not disturbed the nursery so far.

The Ailantus grown on very high, dry ground has stood the winter well. The highest and driest positions in Kansas are the ones where trees should be planted in preference to all others. The Ailantus promises to be the tree for such situations.

The Fifth Semi-Annual Meeting of the Kansas State Horticultural Society will be held in the city of Fort Scott, Wednesday and Thursday, June 2d and 3d, proximo.

Round-trip tickets can be had at the prominent stations of the different railroads for one-and-a-fifth rates, which must be called for at time of departure.

The citizens of Fort Scott offer free accommodations to all from abroad, attending the meeting.

Term Examinations.

The present session closes Wednesday, May 26th. The examinations will begin Monday, 24th, and will be held at the hours named in the following programme:

MONDAY.		TUESDAY.		WEDNESDAY.	
HOURS.		HOURS.		HOURS.	
8-10	Practical Agriculture.	8-10	Entomology.	8-10	Rhetoric.
9-11	Moral Philosophy.	9-11	Analytical Chemistry.	9-11	Free Hand Drawing.
10-12	English Grammar.	9-11	U. S. History.	9-11	Blacksmithing.
10-12	Physics.	10-12	Mechanics.	10-12	Instrumental Music.
11-1	Music (Organ).	10-12	Botany.	10-12	Geometry.
11-1	Carpentry and Cabinet Making.	10-12	Carpentry and Wagon-Making.	10-12	Latin.
11-1	German.	11-1	Vocal Music.	11-1	Horticulture.
11-1	Geometrical Drawing.	11-1	Algebra, Class "B."	11-1	Scroll Sawing and Turning.
11-1	Analytical Chemistry.	11-1	Modern History.	11-1	Algebra, Class "A."
2-4	Arithmetic and Book-Keeping, Class "B."	2-4	Printing.	2-4	Arithmetic, Class "A."
2-4	Telegraphy.	2-4	Drill in English.	2-4	Photography.

The patrons of the College in particular, and the public in general, are most cordially invited to attend.

The Industrial Entertainment will be held next Tuesday evening in the Presbyterian church, at 7:30 P. M. The following is the programme:

—MUSIC.—

INVOCATION.

Mixed Husbandry, Essay, J. S. Griffing.
The Orchard, Oration, G. A. Wake.
A Winter Dairy for Kansas, Essay, W. W. Maltby.
Decorative Art, Oration, Ella Child.

—MUSIC.—

Pruning, Essay, M. F. Leasure.
Industry, Essay, E. M. Shinkle.
The Successful Mechanic, Essay, W. Ulrich.
Work for Woman, Essay, Ella Gale.

—MUSIC.—

BENEDICTION.

The Commencement exercises take place at the Presbyterian church, Wednesday evening, May 26. Below is the programme:

—MUSIC.—

INVOCATION.

The Creation of the World, R. E. Lofinck.
"Ultima Thule," Alice E. Stewart.

—MUSIC.—

Presentation of Diplomas.

—MUSIC.—

Address by Noble L. Prentis.

—MUSIC.—

BENEDICTION.

The Mechanical Department.

It may not be uninteresting to give a brief history of the beginning and progress of this department. The writer of this article was hired by the Board of Regents as steward of the boarding house, commencing with the fall term of 1871; and, being a mechanic, had tools for working both wood and metal. A room in the basement of the boarding house was fitted up as a carpenter shop, and such work done as was needed by the farm and other departments of the College. The blacksmith tools were still at his shop near the college, where, as occasion required, iron work was done. Things went on in this way for about a year. The next fall, seeing the importance of having a Mechanical department started on a better basis, as part of the educational system required by the organic act, the Board was asked for an appropriation to put up a small building for a shop, with the proposition that if they would do so he would put in his tools and give them their use for a year. The proposition was accepted and a frame building 20x40 was built near the boarding house. The fall of 1872 one end of this was used as a blacksmith shop, the other for a carpenter and wagon shop. A few tools belonging to the farm department were turned over to the Mechanical department which added a little to the stock on hand. With these some attempt was made to give students instruction in the use of tools, and they were also employed, as occasion required, to do work for the other departments, for which they were paid by the hour; but the limited number of tools, and the want of room, made it impossible for much to be accomplished. At the commencement of the fall term of 1874, the present policy of teaching the several trades was adopted, and, for the first time, recitations in the shops were recognized and required as a part of the College course for mechanics. A building on the upper farm, that had formerly been used as a barn, 18x36, was fitted up with eleven benches for a Carpenter, Cabinet, and Paint shop; twenty-five sets of carpenter tools were purchased besides a few others for general use. The sets were put up in cases and numbered and arranged so that each member of the class should have his own tools to work with. A regular system of instruction and drill in their use was begun on an hour each day. This practice was had in the afternoon. It was found that this plan interfered so much with those who could obtain work for pay in the afternoons, that the next year the classes recited in the shops at such hours in the morning as they were free from a literary recitation; consequently every hour in the morning (and in some cases those of the afternoon) has been occupied in the shop. During the past year valuable additions have been made to the equipment by the purchase of a lathe, a mortising machine, and a scroll saw, and by the manufacture of a heavier lathe and two scroll saws.—[Capt. Todd.

The Alpha Beta literary society held its last meeting for the collegiate year yesterday afternoon. It is the pioneer in the matter of admitting ladies to the membership and privileges of the society. The marked improvement made by the members since the change attests the wisdom of the course. If any stronger endorsement of the "new departure" were desired, it is furnished by the fact that members of other societies who once hooted at the innovation have since organized a new society in which ladies are admitted.

Answers to Correspondents.

L. D. B.—, Douglas county:—The bird sent by mail is the Esquimaux Curlew, *Numenius borealis*, Latham. It is only a temporary visitor in Kansas in the spring and autumn. There is no law preventing idle boys from shooting it.

J. S. J.—, Howard county:—The animal is the *Phrynosoma cornuta* of Gray, a member of the lizard family, although called the Horned Toad in Kansas and Texas. It arrived safely, is quite lively, and apparently none the worse for its experience in the U. S. mail bags.

F. W. P.— "would like to know whether the European Larch will succeed in Kansas." They will fail probably ninety-nine times out of a hundred. If F. W. P. had read the INDUSTRIALIST from the beginning, it is possible he could have saved his little investment in Larch trees this year.

S. M. FOX,

BOOKSELLER and STATIONER,

Dealer in

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Envelopes, Gold Pens,
Blank Books, etc.

No. 127, Poyntz Avenue, Manhattan. (3-7.)

[Continued from first page.]

We have every reason to be encouraged with reference to the future. The first requisite to successful fruit culture is good trees, and we know that there is no place where trees grow more vigorously and beautifully than in Kansas. We shall never find better trees than can be grown on our soil. This is true both of young nursery stock and of our oldest orchard trees where they have received reasonable care. As far as the apple is concerned, with a judicious selection of varieties there can be no reasonable fear of failure. In due time the harvest will come and the reward will be sure and abundant.

TWO FACTS.

But we ought to remember two facts:

(1.) That no success in fruit culture can be attained without patient and constant care.

(2.) That several years must pass before we can anticipate any remunerative returns.

Many seem to imagine that all they have to do is to plant a few trees and leave them to the contingencies of neglect, then hoping for profitable returns. Now we know that this cannot be. The earth has yielded since the days of our first parents very few good apples without care. There are enemies on every side, and it is well that it is so, for otherwise the sluggard and the diligent man would sit down to the same abundant board. If fruit would grow without care it would bring a very inadequate reward to the cultivator.

But the second fact named, that several years must pass before we can expect returns, has a very important bearing upon the great interest of Horticulture. We frequently wait five, seven, and sometimes ten years, for the first return. With the ordinary farm crop each year brings its return, and if we have selected a poor variety we find it out at the end of the first season, and next year we can correct the mistakes of this year. But in fruit culture it is far different. Here our field is planted once for a life-time. Mistakes swell fearfully in magnitude when we come to deal with trees which are to bring forth bountiful crops of fruit, or to cumber the ground long years after we are gone to the other world. There can be no question but that much of the success of fruit culture will depend upon the intelligence in the selection of varieties. It is certain, also, that we know as a people very little of what ought to be known on this point. Fortunately we have had a few very enthusiastic experimenters in this direction. From the force of circumstances we have all to a certain degree been experimenting. The work so far accomplished is exceedingly valuable to the State. But we can hardly estimate the

ACTUAL COST OF SUCH EXPERIMENTS.

Let us illustrate by two or three actual cases. Mr. Grubb has planted fourteen hundred apple trees, consisting of eighty varieties. He tells us that there are scarcely ten varieties that are worth planting. His ground is cumbered with a very large percentage of trees which can be of no value. They have been a source of expense, and no profit. As far as he is concerned the only return which he gets is this, viz: the knowledge that so many hundreds of his trees are practically valueless.

Again, Mr. Wm. Tanner has five thousand trees, consisting of a hundred varieties. In 1874 these trees gave him a return of \$3,200. He is reported as having said that if he had planted only those trees which he now knows

to be the most profitable he would have realized \$10,000 last year. Now Mr. Tanner has done a valuable work for his part of the State, but we can readily see that it has been done at a fearful cost already, and at a cost which to a large degree must go on for many years to come.

Another gentleman reports last year an income of \$200 from his orchard but if he could select his trees with his present knowledge he would more than treble his income.

There can be then really nothing more essential to success than the intelligent selection of varieties. No after care will atone for mistakes here. With this careful attention to the selection of varieties, and that ceaseless vigilance which is required, there can be no doubt as to the ultimate success of fruit culture here.

Agricultural College.

Thursday forenoon was spent in driving about the city and visiting the Agricultural College. The drive to the College Farm is a beautiful one, and all who went there behind the fast nags of Manhattan, in the bracing air of Thursday morning, were loud in their praises of the city and surrounding country.

Most of those who visited the college took much interest in its workings, and were active in gathering information about the plans of instruction pursued at the institution. Every facility was shown to visitors by the President and faculty. After going through the college building proper, the editors visited the mechanical department, the printing office, the telegraph department, and the barn. Throughout the whole institution there seems to reign the spirit of practical men who are doing practical work for the industrial classes. There is evidence that the Agricultural College is directed with sound common sense, and that the faculty are endeavoring to give to students such education as will fit them for obtaining a livelihood in the ordinary avocations of life. But the officers are very much hampered by their narrow accommodations. The buildings are entirely too small for the needs of the institution. Every department is crowded to the utmost, and it has been found necessary to add still further room for the mechanical department, so a portion of the \$11,000 barn will be fitted up for workshops. It is to be regretted that the legislature has been so niggardly in appropriations for the Agricultural College. Of all the State Institutions it has been the most stingily dealt with, and we think it is high time that this policy should be abandoned, and that industrial education should receive the encouragement which its importance demands. The old tumble-down building that has so long disgraced the State should be replaced by a respectable structure, so that we need not be ashamed to compare it with that of other States. We were placed under many obligations to the President and faculty of the college—and to Prof. Whitman in particular—for favors shown to us during our short visit.—Girard Press.

M. Baillon, a French physiologist, has recently been experimenting on the subject of "Leaves Absorbing Water," and shows that the leaves are capable of and do absorb water. He sowed peas in a box so constructed that the plants could be immersed in water, while the roots and soil in which they grew remained dry. The peas kept alive two months without giving the roots any water whatever—the soil remaining quite dry. Under such circumstances, all the moisture they obtained must have been absorbed by the leaves.—Champion.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

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Papers Pamphlets, and Books neatly bound.

The Nursery.

Very few shrubs or plants escaped the attacks of the locusts last year. The ruin is so general that there are only a few articles which we can offer for Spring planting. We offer

Apple Trees at \$6.00 per hundred.

A few Leib Cherry at 50 cents each.

Austrian Pine, Mountain Pine, and Pitch Pine, 50 to 75 cents each.

A few Large Red Cedars.

Ailantus, 2 years, \$2.00 per hundred.

Ash Green, 2 years, \$1.00 per hundred.

Large shade trees for streets,—**Elm, Maple, Box Elder, Ash**, (both green and white,)—at 25 cents each. Address, **E. GALE.**

KANSAS STATE

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SHORTHORN, | **LANCASHIRE,**

JERSEY, | **BERKSHIRE,**

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ESSEX SWINE. | **DEVON CATTLE.**

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address, **E. M. SHELTON, Sup't Farm.**

Cut This Out!

It May Save Your Wife's Life!!

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COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,

Agent for sale of College Lands.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, MAY 29, 1875.

No. 6.

THE INDUSTRIALIST.

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A. A. STEWART, Manhattan, Kansas.

The Industrialist.

The INDUSTRIALIST is issued, in part, to afford the members of the printing classes of the Agricultural College regular drill in the work of printing and publishing a weekly newspaper; in part, to epitomize current events for the benefit of its student readers; in part, to photograph the work of the several departments of the Agricultural College, for the information of its patrons and the people; in part, to discuss the educational system and methods of Kansas from the stand-point of the rights and necessities of the industrial classes; and, in part, to contribute such practical facts of science as may increase the profits or pleasure of the farmers, mechanics, and business men and women of Kansas. In other words, it proposes to say and do those things which may properly and naturally be said or done by persons engaged in the daily routine of an Institution created by the Nation, and guided by the State, "to promote the liberal and practical education of the industrial classes in their several pursuits."

We will Leave Kansas.

Patrick: "Good morning, Mr. Jones. Can you give me a job? I would like to dig you a well."



Jones: "A well, Patrick! The old woman has gone this morn'g after water from the creek. That is good enough."

Patrick: "And sure, Mr. Jones, it would be very convenient to have a well."

Jones: "I know, I know, Patrick, but we are going to leave the country. The old woman and I can't make a living here."

Patrick: "But we will be sorry to spare you Mr. Jones. (Aside.) The likes of ye will lave yer country for yer country's good."

—[Prof. Gale.]

Forage Plants in Kansas. No. IV.

BY PROF. E. M. SHELTON.

RED CLOVER.

Any discussion of forage plants that excluded the subject of this article, even if the clover plant is of doubtful value to our own State, would certainly be very imperfect. Red clover is pre-eminently the crop of the good farmer, for, besides furnishing cattle food in abundance and of excellent quality, it furnishes manure. Indeed of all the means within the reach of the general farmer, the root of the clover plant is the cheapest for maintaining and increasing the fertility of his farm.

The action of the long and powerful tap root of the clover plant is not only mechanical but chemical; these long roots, besides loosening the soil and subsoil, absorb and bring to the surface the plant food that otherwise would be unavailable to the more shallow rooted cereals.

Moreover, clover hay has a manurial value that is unequalled by any other hay. This value of clover hay will be best shown by a comparison of the common cattle foods as seen in the following table by Mr. J. B. Lawes, of England. The prices opposite the different articles are the values of manure from one ton of feed:

Indian corn,	\$6 65	Clover Hay,	9 64
Wheat,	7 08	Meadow Hay,	6 43
Barley,	6 32	Wheat Straw,	2 68
Oats,	7 70	Oat Straw,	2 90

It will be readily seen that this table, referring as it does to English prices, will be useful to us only so far as relative values are concerned.

The red clover ranks high for pasturing; although inferior for early and late feed to blue grass, for hay it not only yields largely, often two and one-half tons, but when properly cured the quality is excellent, and it is recommended particularly for sheep and cattle. For horses, timothy is usually preferred, as the dust which so often accompanies clover hay tends to aggravate laryngeal and bronchial weaknesses. But whatever may be the value of clover for pasture hay, its chief value will be its worth as a fertilizer of the soil. For this reason it has not unaptly been called the "sheet anchor of American farming." Whether red clover will have the same value for Kansas that it has for the eastern States is at best an open question. In this as in so many agricultural questions, we are greatly in need of carefully conducted experiments. It is certain that a plant which, like the red clover, has had such a wonderful influence upon improved methods of farming everywhere, is well worthy a persistent trial from our farmers. Upon the college farm seven acres were seeded to this plant three years ago. Last year fully one ton per acre was cut from this land. At the present time, notwithstanding drouth and grasshoppers, one-half of this piece promises a fair crop, and over the entire piece a thick crop of young plants is growing from the seed.

In this latitude the clover plant will succeed best when seeded in the spring. In

New England it is commonly sowed upon the wheat-fields during March and April. It may also be sowed to good advantage with barley or oats, and if the harrow be allowed to pass over the ground once after seeding it is a decided advantage. Eight quarts is the usual amount sowed per acre.

In concluding this article, the writer desires to call attention to the following partial list of forage plants, now the subject of experiment on the college farm.

The botanical names have been omitted, as it is believed the plants will be more easily recognized by the general reader through their common names:

GRASSES.

Creeping bent,	Tall smooth panic,
Italian rye,	Schroeder's brome,
Sweet-scented vernal,	Large brome,
Wood meadow,	Velvet,
Orchard,	Sheep's Fescue,
Rough stalked meadow,	Hard Fescue,
Meadow soft,	Darnel Spiked Fescue,
Finger spiked wood,	Meadow Fescue,
Taller meadow,	Purple Fescue,
Blue,	Crested Dog's Tail,
Rhode Island bent,	German Millet.
Italian Clover,	Yellow Lupine,
Red Clover,	White "
White "	Blue "
Alsike "	Sanfoire or Espercette.
Alfalfa "	

Colorado Potato-bug.

BY PROF. J. S. WHITMAN.

These beetles are making their appearance and, notwithstanding their eighteen or twenty insect enemies, may become troublesome in some parts of the State. Of the numerous preventives and cures recommended, hand-picking, sun-burning, and Paris-green, seem to be the simplest and most effective. I am assured by good authority that picking the insects and removing the eggs when the vines are five or six inches in height, and again in ten or fifteen days afterwards, is all the attention they require in an ordinary season. Sun-burning is performed in the middle of a clear hot day, by taking a short-handled broom and striking the vines with a quick lateral motion first on one side and then on the other, which will scatter the beetles and their larvæ between the rows where they soon perish from the heat of the sun and earth. But the best remedy for leaf-eating insects, as far as human agency is concerned, is the application of Paris-green, arsenite of copper, to the moist foliage of the plants. The potato-bug, blister-beetles, and striped cucumber beetles suffer equally from its effects. Before using the Paris-green mix it with from five to ten times its bulk of flour and apply it to the plants with a sifter or gauze bag attached to a handle three or four feet in length; this must be done while the plants are wet with rain or dew. The handling of this poison must never be entrusted to children.

I see no good reason why the white arsenic of commerce, which is much cheaper, could not be substituted for the Paris-green. Will some lover of the melon, cucumber or squash try it on the stupid beetle and report.

THE INDUSTRIALIST.

SATURDAY, MAY 29, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The INDUSTRIALIST has been so kindly received and effectively supported that it will be published during vacation, so that subscribers will receive fifty-two instead of forty numbers for seventy-five cents. The "Staff" will furnish articles on current topics as heretofore.

Adulterations of Milk.

Milk is a fluid which is popularly supposed to be obtained from the cow. Undoubtedly this is the primal source of the lacteal fluid, but it not unfrequently happens that the iron tail of the pump is an important addition to the milkman's dairy.

In all of our large cities it is very difficult to obtain a perfectly pure article of milk. One of the commonest ways of adulterating milk is to mix in it chalk and water; but this fraud is so readily detected that other methods are resorted to.

In the vicinity of large cities inspectors are appointed, whose business it is to examine every specimen of suspected milk. The law standard is that milk must contain at least 12.5 per cent. of solid matter by weight, of which 7.5 per cent. is curd. The latter is estimated as follows: Acetic acid is added to the milk until it curdles. The curd is then separated and dried at 212° F., until all the water is evaporated, and carefully weighed. A variation in the amount of solids and curds is allowed: one per cent. for the former, and one-half per cent. for the latter. Thus if the amount of solid matter does not fall below 11.5 per cent., or of the curd below 7 per cent., in a specimen of suspected adulteration of milk, the prosecution is dropped.

Something may be told of the purity of milk by its specific gravity, which must be at least as high as 1.030. If the milk dealers remove the cream the specific gravity will be much higher than this. But by constant practice the milkmen understand this fact, and so after removing the cream they reduce it by adding water, and if it does not look as "blue as a whetstone" it passes for pure milk. After putting in the water, if it looks too blue they give it the proper yellow tinge by adding a strong solution of caramel, burnt sugar.

Another common way of tampering with milk, is to let the night's milk stand until morning, and after carefully removing the yellow scum from the surface mix it with morning's milk. Of course the milk dealer is the gainer by the amount of cream removed. This method of adulteration is very difficult to detect.—[Prof. R. K. Kedzie.

Wind-Breaks.

Mr. Grubb, of Brown county, one of the most successful and largest fruit growers in the State has believed in the wind-break theory to such an extent as to grow one on three sides, north, west and south, of an orchard of 200 trees. It is composed of cottonwood trees, a dozen rows deep, and now 40 feet high. Since he commenced the planting of his trees for the wind-break he has extended his orchard outside of the enclosure to the extent of 1,400 more fruit trees. He informs us that the trees within the enclosure are all dead, while those outside are uninjured. This holds true for three or four rows of trees north of and outside of the enclosure. The cottonwoods, being high, do not allow the wind from the south to strike the first four rows of forest trees on the north, and they are all dead, while the trees further from the cottonwoods and so situated as to allow the wind to have free scope, are all alive. Mr. Grubb accounts for this by saying that the air in the enclosure is confined and like an oven and this is what killed his trees. He says that it is not only true with him but with every fruit-grower in that part of the State. Where there was a wind-break the trees are dead, and on the contrary where the trees had no protection but are so situated as to allow the wind to have a clean sweep, the trees are alive. Will Prof. Gale arise and explain.—Commonwealth.

Yes. Just what must be expected if the theory presented in the second number of the INDUSTRIALIST be correct. It was then said: "A judicious system of protection would be attended with the most beneficent results while under certain other conditions it might be attended with disaster." The latter will be the case under certain circumstances just as surely as the sun shines and the wind blows. No doubt trees are often killed by too much protection; so are infants smothered in the wrappings which loving mothers have put around them. Then must we throw away all wrappings? We have seen many trees killed in the way Mr. Grubb's trees evidently were. There is nothing perhaps that we should guard against more than this over-crowding of shelter. We are unable to gather from the above, and a very excellent letter just received from our esteemed friend Grubb, all the data which is needed in order to speak intelligently of this case; but from facts obtained in other localities it is well to guard the following points:

(1.) A wide space should always be left between the shelter belt and the orchard. It should be remembered that the above shelter, forty feet high, would make itself felt not over three or four rows of trees merely but for near thirty rods on level ground.

(2.) It should be remembered that the orchard properly planted is no inconsiderable protection to itself; and that the same results follow from that protection as from other wind-breaks, as has been repeatedly shown.

(3.) And while a certain amount of protection is necessary we need to guard against too dense shelter for fruit trees.—[Prof. Gale.

Examination Questions.

The following are some of the questions submitted to the respective classes at the term examination. The others will appear hereafter. Those who could not attend the examinations can by reading these obtain a clearer idea of the ground covered by the several departments:

MECHANICS.

1. Given, two rafters abutting in notches of a tie-beam; it is required to find the pressure or thrust on the rafters, and the direction and intensity on the joints at the tie-beam. Suppose the rafters to abut against the wall, the other conditions remaining the same; required the least thickness that must be given to it, to prevent it from being overturned.

2. There is a track two and one-half miles in length, whose inclination is 1 in 35. What velocity will a car attain in running the length of the road by its own weight, hurtful resistances being neglected.

3. What must be the elevation of the outer rail of a track, the radius being 3,960 feet, the distance between the rails five feet, and the velocity of the car thirty miles per hour, that there may be no lateral thrust?

4. What must be the thickness of a rectangular dam of granite, that it may neither rotate about its outer edge, nor slide along its base; the weight of a cubic foot of granite being 160 pounds, and the co-efficient of friction between it and the soil being six-tenths?

5. The cross section of a lifting and forcing pump is six square feet, the play of the piston three feet, and the height of the spout above reservoir, fifty feet; what must be the effective horse-power of an engine to impart thirty double strokes per minute, hurtful resistances being neglected?

ELEMENTARY PHYSICS.

1. State the three kinds of equilibrium and give examples of each.

2. Define and give laws of oscillation of the pendulum.

3. What is specific gravity? Give three methods of determining the specific gravity of solids.

4. What is the velocity of sound in air, the temperature being 32°? How determined?

5. Give methods of constructing the mercurial thermometer.

6. Change 50° centigrade to its equivalent on Fahrenheit's scale.

7. Give boiling point of water at sea level. State some causes that modify the boiling point of liquids.

8. What is the velocity of light?

9. Give the seven colors of the spectrum in their order. How may these colors be recomposed?

10. Describe the Newtonian telescope.

GEOMETRY.

1. Write two theorems relating to parallel
[Continued on third page.]

[Continued from second page.]

lines. Demonstrate one.

2. Demonstrate "a radius which is perpendicular to a chord, etc." Give all the corollaries.

3. Write three theorems relating to the measurement of angles. Demonstrate one.

4. Give conditions of equality of angles.

5. Give conditions of equality of triangles.

6. Conditions of similarity of polygons.

7. Demonstrate the Pythagorean proposition.

8. What determines position of a plane?

9. What are similar solids?

10. What relation do two similar surfaces sustain to each other? Similar solids?

ARITHMETIC AND BOOK-KEEPING, CLASS 'A.'

1. Write a promissory note; also a receipt.

2. State the chief difference between single and double-entry book-keeping.

3. Describe the use of the books used in double-entry, and state when cash, merchandise, bills payable, bills receivable, and personal accounts should be debited and credited.

4. How do you find the present worth and true discount of a debt due at a future time without interest?

5. What shall be the face of a note at bank, due in sixty days, interest eighteen per cent., which shall give a proceed of \$2,500?

6. What shall be the face of a draft 90 days after sight, interest fifteen per cent., exchange three-fourths per cent. premium, which can be purchased for \$1,650.

7. Find the cube root of 60,236,288.

8. State the principle of the square on the sides and hypotenuse of a right angle triangle, and tell how to find any of the sides, the other two being given.

9. I wish to dig a cylindrical cistern to contain eighty barrels. Its diameter is seven and one-half feet. What shall be its depth?

10. Discuss the topic of Proportion.

DRILL IN ENGLISH.

1. Write twenty minutes upon one of the following topics: "1876;" "Fruit raising in Kansas;" "The Farmer's Life;" "Good Manners."

2. Correct the following sentences and give the reason for the correction: "Him that is studious will improve." "The judge which pronounced the sentence was an upright man." "Every student reported themselves present on that day." "Who did you see yesterday?"

3. Classify sentences by means of a chart.

4. Write a sentence which is both compound and complex.

5. Write a chart of the elements of sentences.

6. Mention the places in which commas are used.

7. Analyze the following: Rays which fall perpendicularly upon the surface of the earth are called vertical.

U. S. HISTORY.

1. Date the period of discovery and name the persons who made the discoveries during that period.

2. Mention several unsuccessful attempts to plant colonies in the new world.

3. Date the period of the permanent settlement of the thirteen colonies, and state the prominent facts in regard to the settlement of Massachusetts.

4. State the cause of the Revolutionary war. Between what dates did it occur? Name eight prominent generals who served the country under Gen. Washington.

5. Name the Presidents of the United States in order, with their terms of office.

6. Give an account of Gen. Taylor's expedition in the Mexican war.

7. State the cause of the war of the Rebellion, and name the prominent engagements led by General Grant.

8. State the qualifications, manner of election, term of office, and the way in which vacancies are filled, of a United States Senator.

9. Give the steps in full of the election of the President and Vice-President.

10. Through what steps must a bill pass to become a law?

THE INDUSTRIALIST.

SATURDAY, MAY 29, 1875.

The rush of Commencement has delayed this number, and changing quarters may delay the next.

All the students will join in our sympathies with Geo. H. Failyer and sisters in their sorrow occasioned by the sudden death of their sister Mrs. Belle C. Miller. The sad news came Friday.

Senator Harvey, one of the earliest and staunchest friends of this Institution, showed his unabated interest by attending Commencement. It was a pleasure to meet him looking so well, and judging from the quickness with which his laughter popped out at Prentis' sallies we fancy he enjoyed himself more than during the Louisiana discussion.

The Manhattan band discoursed fine music splendidly, and everybody concurs in this action of the Regents:

Resolved, That the thanks of the Board of Regents be and are hereby tendered to the Manhattan Cornet Band for the music furnished by them at the Commencement exercises of the Kansas State Agricultural College on the evening of the 26th inst.

And here is what the Board said about the annual Address:

Resolved, That the thanks of the Board of Regents are due and are hereby tendered to Noble L. Prentis, for his able, eloquent and appropriate address delivered before the Kansas State Agricultural College at the Commencement, May 26th, 1875, and that a copy of the same be requested for publication.

Resolved, That the President be instructed to publish two thousand copies of the address delivered by Noble L. Prentis before the College, in pamphlet form.

Besides giving a merited recognition of faithful services, and expressing the feeling of the Regents, each of Prof. Lee's colleagues and pupils would gladly join in the following by the Board:

Resolved, That in parting with Prof. J. H. Lee as a member of the Faculty of this Institution, we desire to express our hearty appreciation of his fidelity, ability and efficiency in the discharge of the several duties which have been imposed upon him during the past nine years of his connection with the Kansas State Agricultural College, and to assure him of our official and personal interest in his future welfare and happiness.

Upon the fourth page will be found a list of all the students attending during the collegiate year, 143 in number. They came from 39 different counties or States as follows:

COUNTIES.	
Allen.....	2
Atchison.....	3
Brown.....	2
Butler.....	3
Chase.....	1
Cherokee.....	3
Clay.....	6
Coffey.....	1
Davis.....	5
Dickinson.....	3
Franklin.....	3
Greenwood.....	1
Howard.....	1
Jackson.....	6
Jefferson.....	5
Linn.....	5
Labette.....	3
Marion.....	1
Marshall.....	4
Miami.....	1
Mitchell.....	1
Nemaha.....	3
Osage.....	5
Ottawa.....	1
Pottawatomie.....	5
Riley.....	*50
Saline.....	1
Sedgwick.....	4
Shawnee.....	1
Wabaunsee.....	1
Washington.....	2
Woodson.....	2

* Of these nine were from Manhattan.

STATES.	
Colorado.....	2
Indiana.....	1
Indian Territory.....	1
Minnesota.....	1
Missouri.....	1
New Mexico.....	1
Virginia.....	1

Commencement.

The exercises of Commencement week began with the delivery of a sermon before the graduating class by the President, Sunday afternoon, 23d inst., upon the subject: The gospel of Christ the power of God unto salvation, from the text, "I am not ashamed of the gospel of Christ, for it is the power of God unto salvation," Romans 1:16.

The same evening an able address was delivered before the Young Men's Christian Association by the Rev. R. Wake, pastor of the Methodist church of Manhattan, upon the subject: The educated man. The theme was finely handled and effectively presented.

The term examinations began Monday morning and continued through Wednesday, from 8 A. M. to 4 P. M. each day, and were more largely attended

than heretofore, especially during Wednesday. They were partly written and partly oral, and were so arranged that visitors could spend an hour with each class. The professors and students have done hard and thorough work, and judging from the numberless expressions of those attending, they received well deserved credit.

Tuesday evening was very pleasantly spent at the Industrial Entertainment, presided over by Prof. Lee, which consisted of essays or orations by eight members of four of the industrial departments. The class in Practical Agriculture was represented by J. S. Griffing, "Mixed husbandry," and W. W. Maltby, "A winter dairy for Kansas." The class in Practical Horticulture, by G. A. Wake, "The orchard," and M. F. Leasure, "Pruning." The Mechanical department by E. M. Shinkle, "Industry," and W. Ulrich, "The successful mechanic." The sensible Woman's department appeared in the persons of Miss Ella Child, "Decorative art," and Miss Ella M. Gale, "Self-supporting work for woman." These subjects were so essentially different from those usually found in college exercises, and were so practically treated, that the large audience of practical people was agreeably disappointed by being entertained instead of bored. As the documents will appear in this paper no comments upon them need now be made.

The graduating class delivered their orations on Wednesday evening, Mr. Reuben E. Lofinck discussing "The creation of the world," and Miss Alice E. Stewart "Ultima thule." The degree of Bachelor of Science was conferred on the gentleman, and that of Bachelor of Arts on the lady, and the diplomas presented. This class, like that of last year, was graduated on the curriculum usually followed by literary colleges. Classes hereafter will be graduated upon the new curriculum.

The degree of Master of Arts was conferred upon Wendell S. Williston.

The treat of the week was the annual address before the College delivered by Noble L. Prentis, of Topeka, upon: The world a school. It was unique, and as different from the ordinary run of commencement addresses as is vigorous sense from owlish platitudes. In fact, its novelty consisted in its straight out, solid, brilliant common sense. From the first clause of the first sentence to the close of the splendid peroration the largest audience we have seen in Manhattan was spell-bound. Our readers, and those of the Nationalist, will receive the address in full next week, hence no synopsis will now be attempted. No abler or more entertaining discussion of education has come to our notice, nor one containing more and harder "hits," truer wit, poetry and eloquence. It should be read by every body; and will have a decided effect in knocking the sham out of, and practical sense into, our educational system.

Students' Column.

Since the students left, these buildings and grounds constantly remind one of that loneliest of all lonely things—a fine steamboat laid up for the season in charge of a solitary watchman and rats. One reason for publishing this paper during vacation is to keep the students posted in the progress of the new buildings, etc., and especially to enable them to talk to each other. Write us, each of you, where you are; what you are doing; how you like it, as far as you have got; the condition of crops, weeds and bugs; and anything else that you would like to have others say about themselves or their localities. Keep the "Students' Column" full, and begin now!

The Websters had a rousing meeting last Saturday evening. They debated the question, "Are State Institutions of learning preferable to Sectarian?" This being the last meeting, the members seemed determined to have all the fun there was in it. They sounded their president as to his knowledge of parliamentary usages, by taking every possible advantage of each other. And we are led to say, in the language of Biot concerning his long speaking tube, that the only way to avoid learning parliamentary rules is not to be a Webster. By the exertions of the members, and especially the liberality of the faculty, they have added several books to their library this year. They have now nearly one hundred volumes of good and useful books.

THE INDUSTRIALIST.

SATURDAY, MAY 29, 1875.

Students Enrolled Since Jan. 7, 1875.

NAME.	COUNTY.
Beamer, David A	Jackson
Beckwith, Anson	Washington
Bell, Franklin P	Butler
Benedict, Flora	Pottawatomie
Browning, Alice	Riley
Browning, Emma E	"
Burnham, Wm P	New Mexico
Burroughs, Frank C	Riley
Burroughs, Arlettie	"
Caldwell, Thomas J	Allen
Campbell, Flora A	Jackson
Campbell, Florence A	Riley
Cannon, Wm R	Allen
Chamberlin, Willis P	Riley
Child, Ella S	"
Coffey, Winnie	Jefferson
Copley, John T	Labette
Crouse, Clay C	Indian Ter.
Davidson, George K	Coffey
Dow, Charles A	Cherokee
Failyer, George H	"
Failyer, Mariam	"
Failyer, Miriam	Dickinson
Flack, John B	Labette
Fraunberg, Wm S	Nemaha
Fuller, Lewis F	Riley
Gale, Ella M	"
Gale, George A	Greenwood
Godfrey, Albert N	Osage
Gregory, Wesley	Nemaha
Grover, Mortimer C	Riley
Griffing, John S	"
Harper, Josephine C	Franklin
Harris, Charles S	Mitchell
Hiddleston, Frank W	Riley
Himes, Phoebe	Jackson
Hixon, Columbus	"
Hixon, Samuel	"
Houston, Charles S	Riley
Houston, Lawrence N	"
Houston, U Grant	"
Howard, Jasper	Brown
Hoyt, Fred O	Jackson
Hubbell, Frank P	Davis
Humphrey, Louis E	"
Huston, Charles	"
Ingraham, Florence	Riley
Jaquith, Walter W	Davis
Jenkins, Wm H	Shawnee
Johnston, May	Clay
Johnston, Nellie	"
Kimball, Carrie	Riley
Kimble, Martha	"
Kimble, Mary A	"
Knipe, Wm A	"
Landon, Frank B	Pottawatomie
La Tourrette, Jas F	Ft Lyon, Colorado
Leasure, Marion F	Linn
Lofinck, Reuben E	Riley
Mails, Jennie E	Pottawatomie
Maltby, Wm	Saline
Maynard, Henry S	Miami
McKelvy, Robert	Washington
McCormick, Henry H	Woodson
Meeker, Julian L	Franklin
Merritt, Arthur H	Jefferson
Midgley, Thomas	Ottawa
Morris, Mary E	Riley
Moses, George C	"
O'Leary, Alena	Dickinson
Oursler, Alphonso R	Jackson
Parish, Effie A	Riley
Parish, Ella A	"
Parsons, Mildred B	Kansas City, Mo.
Pechner, Lizzie	Riley
Phillips, Anna	"
Platt, George L	"

Platt, Hattie M	Riley
Pound, Byron H	"
Pound, Isabella B	"
Proctor, Belle A	Linn
Proctor, John C	Linn
Records, Francis A	Howard
Reed, Almada J	Davis
Richmond, Corydon S	Sedgwick
Richmond, Gustavus A	"
Richmond, Irving	"
Riley, Lizzie	Riley
Rogers, Julia F	Osage
Rogers, Louis B	Dickinson
Rushmore, Henry C	Jefferson
Russell, Charles N	Tierra, New Mex.
Sawyer, Nellie	Franklin
Sherman, Marcus	Brown
Shinkle, Ezra M	Linn
Shuemaker, Simon C	Nemaha
Sikes, Melva E	Pottawatomie
Smith, Henry	Osage
Smith, Mary B	Linn
Stewart, Albert A	Labette
Stewart, Alice E	Riley
Stone, Wm S	Butler
Streeter, Abbie J	Riley
Streeter, Chas A	"
Todd, Irving	"
Titsworth, Wilbur H	Atchison
Ulrich, Edwin H	Riley
Ulrich, William	"
Viets, Clayton L	Butler
Wake, George A	Clay
Weeks, Abbie C	Marshall
Whitman, Minerva E	Osage
Whitney, Genevieve	Riley
Wilkin, Frank H	Sedgwick
Williamson, Joseph E	Royal Center, Ind.
Williston, Carrie	Riley
Winne, Ella M	"
Young, Willoughby	Davis
Bird, Nathaniel S	Atchison.
Bill, Wilbur F	Riley.
Brous, Alfred H	"
Clark, Myron E	Marshall.
Carson, Renick	Jefferson.
Elliott, Clara	Riley.
Graves, Jas M	Atchison.
Gregg, Horace P	Riley.
Howard, Walter C	"
McLean, Harry A	Marion.
McCormick, Jas G	Woodson.
McBride, Ralph W	Jefferson.
Noble, Alice E	Marshall.
Noble, Ina C	"
Quimby, Frank B	Clay.
Reser, Isadora F	Riley
Redenbaugh, Lydia A	Osage.
Russell, Coleman L	Clay.
Russell, Effie C	"
Streeter, Alfred C	Riley.
Sater, Harvey D	Minnesota.
Shofe, Ella	Virginia.
Troth, Jas T	Wabaunsee.
Thompson, Chas A	Chase.
Waring, Edwin F	Riley.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, JUNE 5, 1875.

No. 7.

THE INDUSTRIALIST.

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PRINTING DEPARTMENT

OF THE

KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

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The World a School.

[An Address delivered before the Kansas State Agricultural College, at Manhattan, May 26th, 1875, by Noble L. Prentiss.]

In a State which had elections before it had legal voters; railroads before it had freight and passengers for them; and newspapers before it had printing offices; a State which one of its gifted and honored sons described in a magazine which rose, fell and faded because it was published before it had readers, as the "hottest, coldest, driest, wettest, thickest, thinnest country in the world;" there can be nothing surprising or worthy of apology in the fact that, on an occasion like this, an individual should be selected to speak to classical scholars, who does not himself know one Greek letter from another; and who, so far from knowing anything of the Latin particles, does not know a particle of Latin; that one should be chosen to address, with an implied obligation to instruct, gentlemen who are proficient in the mechanic arts, yet who himself could not construct a symmetrical toothpick, even with the plans and specifications before him; or that there should be delegated as the "guide, philosopher and friend" of teachers and students of the science of Agriculture one who, should there arise in future times a contest like that which raged over the authorship of the "Letters of Junius," might be put forward as the probable writer of that singular compendium of ignorance, "What I know about Farming," instead of the late Horace Greeley.

While thus disclaiming any necessity for an apology, your orator will not, however, avail himself of ten thousand time-honored precedents, and, after first announcing that he is "entirely unprepared to make a speech," proceed to demonstrate the truth of that preliminary remark to the absolute conviction of everybody; but, avoiding educational bays and inlets which he has never navigated, will head out to the sea which no man owns; which has no macadamized roads or beaten paths; over which the man who sails, though it be for the thousandth time, still sails a discoverer—a ten thou-

sandth edition of Christopher Columbus; and, instead of speaking of this man's books, and of that professor's school, he will speak of a book which no man wrote, and which is not yet completed; he will discourse of a University for which men's schools and colleges and universities are, at the very best, a slight preparation; and these thoughts and suggestions will be brought together under the general title of "THE WORLD A SCHOOL."

Possibly some may enquire by what process a speaker, confessedly ignorant of many valuable things found in books; and deprived by chance, circumstances, and, in early life, want of inclination to acquire what is commonly called an education; has obtained the knowledge which he proposes to impart; from what store-house, they may ask, does he propose to draw his facts and inferences? The reply is, that this qualification and these facts and applications are obtained through what is itself an educational process, although it is never mentioned in the educational journals, or discussed at the teacher's institutes, or supervised by that oppressive mystery, the Bureau of Education at Washington; and this sort of education is called in America and by Americans "Knocking About."

The course varies with every scholar, and occupies various periods of time. With most Americans it lasts from early manhood, sometimes from early boyhood, to the end of life. It is the fate of very few to graduate early; to find some sailor's snug harbor where they may ponder over what they have learned, and be knocked about no more. The students of Knock About University cannot locate on the map the seat of that institution; it has no special post-office address. Like love, it is found in the camp, the court, the field and the grove. The student resides at no particular boarding house; and, as I have said before, the course varies with each student, though the course is by no means optional, since the student frequently pursues branches which he does not fancy; and, indeed, instances are of record where the course has suddenly ended at the branch of a tree. In the course of his studies the student may be transported from the banks of the Ohio to those of the Sacramento, and thence to the James. He may be transferred from the society of students of the Septuagint to that of professors of the seven-shooter. He may become in turn, or be all at once, a preacher, a newspaper correspondent, and a soldier. He may be at the same time a member of a presbytery and of a general's staff, and perform at once, and in different ways, the functions of an ambassador of Heaven and of the Sanitary Commission. To-day he may be learning to set type, and to-morrow building a church; to-day he may be fearlessly denouncing sin and wickedness, and day after to-morrow fighting a narrow-gauge railroad. In none of these pursuits is he adhering to what I am informed is called a "curriculum;" and in the prosecution of these various labors he may not open a textbook for weeks together. And yet, he is all

the time acquiring knowledge which mortal man never yet extracted from between the covers of any book ever written by man. In these years his hands are hardening for the work they have yet to do; his shoulders are widening for the burden they have yet to bear; his sinews are strengthening for the race he has yet to run; his heart is enlarging for those he has yet to embrace in its sympathies; and his mind is acquiring that breadth and force, vigor and clearness which will at last be required in the instruction of—it may be you! young ladies and gentlemen. It is hardly necessary for me to say that the rough sketch I have just drawn is not intended as the outline of an autobiography. Far less useful and brilliant has been the career of your fellow-student of the evening. And yet it may be, that even in the experience of years spent in the enforced wandering of a common soldier; of other years passed even in the humbler walks of a profession created within a century or two, specially to record day by day the progress of this busy world; of years filled in with a mass of reading, even though careless and unsystematic; it may be that, in all these years, some knowledge which may be imparted to others has been acquired of that world which Shakspeare says is all a stage, but which, for this evening we will consider is all a school.

If there is any one thing that there has been a settled endeavor to impress upon the minds of the students of this Kansas State Agricultural College it is, that, neither at this nor at any other institution of learning; neither at Manhattan, nor at Gottingen, nor Tubingen, nor any other place that ends in 'ingen,' can be acquired what some people are pleased to call a 'finished' education. This Institution does not, if I correctly understand its purposes, teach the young idea how to shoot. It merely endeavors to furnish him with powder and shot, and expects him to do his own shooting! All that is learned here is, as I understand it, only intended as a preparation for the student who is going out to become a gownsman, as the English would say, in that great university, the World.

I say 'going out into the world,' and I use the expression advisedly. The young man or woman who has passed twenty years of life, who has known something of struggle and toil, incurred possibly in order to avail himself or herself of the advantages of this very Institution, may think that he or she is already in the midst of the great world; but this is hardly the case. New York harbor is a part of the ocean; the water is salt and sometimes rough, and the breeze that blows over it is fresh and strong, and the tide rises and falls; but no ships are ever seen under full sail in its waters. They are towed about by steam tugs, and it is only when you are outside of the Narrows, and the tug has cast off and the pilot is gone, that you are at sea; and the difference is, that from that time on her journey through light and darkness, through sunshine and storm, near the low reef or sunken rock, for thousands of miles, until

the once familiar stars are gone and even the heavens are strange, the good ship must care for herself alone. For days she sails the lonely deep, nor sees the faintest glimmering of a friendly sail. When the sky grows black, the waves grow white, and the vessel rolls and groans like a sick man in his sleep, she cannot run into a friendly harbor; her salvation depends on her keeping off shore. If there are defects in her construction; if she is ill-manned, or if her rigging is worn when she leaves port, she cannot return to mend these defects. Courage and skill on the part of the officers must repair damages and provide against calamity. But there is no going back. She is at sea.

And this it is that makes going out from an institution like this really going out into the world, because it marks the limit between dependence and self-help. The student here obeys rules and regulations prescribed by others; he reads books placed in his hands by others; he receives opinions, to some extent, because they are promulgated by authority; but when he steps out of these bounds, all this ceases. He is his own man then. A Frenchman, relating an experience in England, and illustrating the omnipresence of the English officers of the law, said: "I was alone with God—and a policeman." And so the newly graduated is alone in the world, with a diploma.

That diploma is a good thing. Your speaker wishes he possessed one; he would prize it, even though it were written in newspaper English. But, after all, the parchment only tells what has been done, and it does not always tell the whole truth about that. In a healthy soldier's discharge from the service are the words: "No objection to his being re-enlisted is known to exist;" I imagine that sentence might be written with propriety on an occasional diploma. The graduate might go back and go through the course again without injury. But admitting that the diploma has been well and fairly earned, it is only an evidence of work worthily done, so far; of a good beginning. It is, at the best, a certificate that John Smith or Jane Smith, as the case may be, has made a good start toward acquiring an education, and is prepared, as far as the institution conferring the diploma can furnish a preparation, for entrance in that greater, higher school, the world.

And right here, over the question what sort of preparation should be furnished, has been fought the battle of the educators. It is over this that the great educational gods have kept "this dreadful pother o'er our heads;" it is over this that it has thundered all around the sky; it is over this that usually mild-mannered men have shot wrathful glances through their gold-bowed spectacles, while every fold of their white neckcloth swelled with indignation. The result of the battle has been the establishment of two varieties of colleges; one teaching the classics, and conferring the information that "Achilles' wrath" was "to Greece the direful spring of woes unnumbered," and also furnishing the truly gratifying information that Major General Xenophon, with ten thousand men, has fallen back from Richmond to the Chickahominy, and now has the enemy just where he wants him; and the other variety teaching the modern languages, natural sciences, agriculture and the trades. Possibly this may not be an exactly accurate statement of the case, but it must be taken as the account given by a passing reporter who took no part in the row himself. But, seriously, men must take

the world as they find it, and what kind of a world does the graduate find when he leaves the hall which he has paced so long? Is it like an old fashioned college? The sinking heart of many a young man as he has stood in the midst of the surging, careless, seemingly selfish, rude, well-nigh merciless crowd for the first time, has told him that the world is no green college campus; that the men he must meet day in and day out; with whom and from whom he must earn his bread, are not professors or students; are not men of culture; that they are not interested in the woes of Greece, but are vastly concerned about their own woes, their own business, and their own dinners. Stand where meet the thronged ways in any great city, and notice what men carry in their hands, or under their arms, or in their breast pockets, and you will find out something about this world. Here goes a painter with his bucket of white lead; there goes a carpenter with his square; here passes an Italian with a board on his head covered with plaster of Paris figures; here, one after another, pass a dozen clerks with pencils over their ears, and bits of paper in their hands and papers sticking out of their pockets; shop boys pass repeatedly with bundles; here walks a round shouldered chap with the end of his right thumb and finger discolored and worn off a little—he is a printer, and takes a brass composing rule out of his pocket and puts it back again; men pass with hods, with mortar-boards, with trowels; there may pass once in a while a young gentleman, a smile irradiating his classical features,—that is a reporter, going to congratulate with the coroner over an approaching inquest. This little panorama shows how men live; how you, my friend, with the bright and shining diploma, must live. Suppose you wish to find out what these men know. Quote, if you please, something from Homer, in the original Greek; something affecting; the best thing there is in the book about Achilles' wrath and the woes of Greece. Try this on the most intelligent looking man who passes, and if he is a Kansas man—as he probably will be if he looks uncommonly intelligent—he will look at you in a pitying way and remark that it is a burning shame that the insane asylum at Osawatimie was not enlarged, or a new one built years ago. It is evident that the gentleman does not know Greek. And if you will look further you will find before long a man in the crowd who cannot translate the simplest Latin sentence, who, nevertheless, has a diploma at home written in that language. But the trouble is, that shortly after his graduation, the exigencies of life obliged him to cease to trouble his head about how long Cataline intends to abuse our patience, and, abandoning all concern about the woes of Greece, he went into the soap-grease line of business. A few moments, then, passed where men may be seen about their ordinary vocations, shows us that the world, which we have said is a school, is likewise an Industrial School. A vast majority of men are engaged in industrial pursuits, and this, too, without regard to the circumstances of their early education. To this complexion men must come at last.

Admitting this to be true, and it most certainly is true, what sort of preparatory school is the best for a young man or young woman who must, in time, enter this great industrial school, the world? The question is easily answered. The preparatory school should be the same, in kind, as the advanced department. It should be what the Boston

Latin school has so long been to Harvard. Common sense, to be plain about it, indicates that the transfer should be from the primary industrial school.

But some people say the office of colleges and universities is not to prepare young men and women for the rugged vocations of life, but to impart to them mental culture. Culture is good, but the question arises what is the best culture? A man might take a quarter section of raw prairie, break it, harrow it, and finally seed it down to marigolds, and that would be culture. The result would be beautiful. A thing of beauty and a joy, till frost comes, would be that field of marigolds. What eye would not kindle when "jocund day stood tiptoe on the misty mountain tops," pointing with rosy fingers to those one hundred and sixty acres of glowing, golden marigolds. But the man owning the adjoining quarter breaks up the prairie sod and puts the entire tract in onions, and that would be culture, too. The onion is not an aristocratic vegetable. It is not admitted into good society. When the opera house is a blaze of light; when the wealth of empires glitter in diamonds on necks of snow; when the echoes of delicious music fill the high hall, and the vast drop curtain as it falls trembles responsive to the applause that swells from parquet, boxes and galleries; no admirer ever throws at the feet of the child of genius, the embodiment of beauty and melody, a dewy bouquet of fresh culled onions. And yet, to return to the kind of culture in the prairie, public sentiment, leaning over the rail fence and commenting on the two quarter sections, goes with the raiser of onions; applauds the thoroughness of his culture; remarks the admirable condition of the ground and the absence of weeds; and the man of onions goes down to his house justified rather than the other. I confess that I am a partisan as between marigolds and onions. I am an ultra onion man, myself.

But, leaving this discussion, it is to be taken for granted, students of the Kansas State Agricultural College, that you have made up your minds to cast in your lot with an institution which can say to you when you leave it for the last time: "Go my son, go my daughter; I have done all I could for you; would that it were more. I do not send you forth filled with dreams and visions. The world is a working world, as I have told you often, and I have fitted you as best I could to begin that work. You, my son, may not rise to what the world calls distinction. It may not be yours, the "applause of listening Senates to command," but you may, please God, live honestly and worthily, and eat the bread your own hands have earned. And you, my daughter, go hence, freed from woman's bane and curse—an ignorant helplessness; you go with skillful, trained fingers and an honest heart into a world that has need of you and such as you."

Graduated from this school and entered upon that other school, the world, who, what, where, are the teachers? They are around, above, beneath you; they are yourself, man and nature. He who hath ears to hear let him hear in the world the myriad voices that speak to him. Let him find the "tongues in trees, the books in running brooks, the good in everything," of which the self-taught Shakspeare wrote. But time passes, we cannot call the faculty of the University of the World, and so I make a few suggestions addressed more particularly to the graduating class, and those who are

[Continued on third page.]

THE INDUSTRIALIST.

SATURDAY, JUNE 5, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Prof. Lee contemplates a visit to Ohio.

Prof. Whitman is at Lyndon, his home.

W. C. Stewart is spending the vacation at Emporia.

Mrs. Ward is visiting Ottawa, for which place Prof. Ward leaves in a few days.

Profs. Gale, Shelton, Platt, Mrs. Werden and Capt. Todd remain here during vacation,—as does this unfortunate.

Frank B. Landon reports having had a pleasant trip home, Vienna, and wants to know about the game of ball.

Next week our regular contributors resume their articles; and, now that Commencement is over, the INDUSTRIALIST will present its usual variety.

We received a call this morning from one of the lady members of the printing class, Miss Ella Winne. She wanted to see how we looked in our new quarters.

The Nationalist will accept our thanks for the loan of a column of nonpareil. If anybody fancies that a little paper won't hold matter, let him read this one through.

Judging from present appearances there will be a large attendance next term, and one blessing is that none will be kept away because of want of boarding, as has been the case at times heretofore.

The INDUSTRIALIST has removed from the Hill to Manhattan, and, until the new buildings are ready, will be found in the room formerly occupied by L. R. Elliott, first door east of the Adams House.

The walls of the new shop are about two feet above ground. In the barn, the joists are ready for the floor, and the studding of the partitions is in place. On the second floor, the ceiling is ready for the laths. The contractors are pushing the work rapidly and doing it well.

Prof. Robert K. Kedzie, who has so ably filled the chair of Chemistry since the departure of his brother Prof. Wm. K. Kedzie for Europe, has returned to the Michigan Agricultural College. While here he made every body his friend, as he will continue to do through life. Success to him!

The fruit prospects in Kansas this year are not encouraging, yet there will be some peaches and a few apples in the central and southern parts of the State. On account of the small burden of fruit and the luxuriant growth of the season, that which does mature will probably be unusually large.

There are two things to which it is not necessary to call attention; first, that our space is very decidedly occupied this week by the Commencement address of Noble L. Prentiss; and, second, that it could not be more interestingly filled. Any one who begins to read this production will be apt to finish it; and those who do not will miss many good things.

The Kansas State Horticultural Society has just closed its semi-annual meeting at Fort Scott. The meeting was a good one in that it has served to develop the strength of faith exercised by Kansas tree planters, and to inaugurate several new measures which can hardly fail to promote the interests of Horticulture in the State. These measures will be presented in these columns in due time.

The locusts are flying from Southern Kansas as fast as they get wings. The air in the neighborhood of Parsons was full of them on May 31st, and also at Fort Scott on the 3d. The parasitic enemies of these creatures are making havoc with them at Fort Scott, and doubtless through all this region. If any one believes that these pests will deposit eggs

in this climate he can, by a simple examination, satisfy himself that at least four out of six, if not five out of six, will leave no descendants to mourn their untimely end.

The Bluemont base-ball club had two very close games at Topeka. In the first, the ninth inning was a tie, each side having made seventeen runs, and it was necessary to play a tenth, when one run gave the victory to Topeka. The next morning seven innings were played, not a match game, which our boys won by a score of 20 to 18. Of course they challenged the Topeka club for a return game, and we expect them to win it. They did well, but must do better. We don't care whether the students of this College play ball or not; but if they do, they must win. And it is immaterial whether they get beaten or not; defeats are better teachers sometimes than victories; but they have got to win the final victory.

HORTICULTURAL ITEMS.

Apple grafts looking fair.

Grape vines are mostly dead.

Grasshoppers have done little damage so far.

Pear grafts looking well; probably ninety per cent. are living.

Plowed orchard and corn, and hoed apple and pear grafts this week.

FARM ITEMS.

Will our farmers whose lands are a "little run down," but who manage to grow a good crop of weeds, adopt this plan: Plow deeply and well, any time in May or June, then, after the small weeds like purslane have begun to start, harrow or cultivate thoroughly. Late in August cross-plow the whole, and sow to wheat sometime during the first two weeks of September. If the land is very poor you can help it wonderfully by seeding it to millet after the first plowing and turning this under when in bloom.

Building sheds, cultivating corn and summer-fallowing keep every one busy just now. By the by, summer-fallowing ought to be practiced much more in Kansas than it is, for several reasons: 1. On moderately fertile soil it is the surest way to obtain a good crop of wheat. In New York and Michigan a good crop of wheat is rarely expected except upon summer-fallow. 2. Summer-fallowing is the cheapest of all the means within reach of the general farmer for cleaning the land of foul stuff, the result of previous slovenly farming.

For stolidity, persistence and strict attention to business, commend us to the plant called the alfalfa. Neither drought, chinch-bugs or grass-h's seem to disturb its serenity. We have one and a half acres upon the college farm that was seeded April 8th, 1875 to alfalfa. To-day, June 7th, the ground is completely occupied with a dense, even growth of this valuable forage. From this mass we have selected plants that measured sixteen inches above ground. The root broke off at ten inches and doubtless extended several inches beyond this point. If alfalfa keeps its good name during the coming season, many acres will be seeded in this vicinity in 1876. Who knows but that the introduction of alfalfa may mark the turning point in our agriculture, just as the introduction of clover and turnips one hundred and fifty years ago marked a new era in the agriculture of Great Britain.

[Continued from second page.]

soon to follow them. There is a phrase, I believe it is called a "slang phrase"—though whose function it is to say what is slang and what is not, I do not know—but the phrase runs this way: "Be good to yourself." It is not an exhortation to selfishness—men don't need that. It means respect yourself, take care of and do not squander yourself. You will find that if you are not good to yourself no one else will be good to you. You owe no apology to any one for being here. You have as good a natural right to a front seat as any boy or girl who goes to the world's school.

This Institution, I am informed by the President and members of the Faculty, is not intended for the exclusive production of Presidents of the United States, nor does it guarantee to its graduates situations in the United States Senate; but it is well enough for young gentlemen to remember that gen-

uine distinction is to be attained in the line of agriculture and the mechanic arts. As an illustration of the dignity of agricultural pursuits, you often hear the quotation that "he who makes two blades of grass grow where one grew before is a public benefactor." The whole paragraph, which may be found in Gulliver's Travels, is still more striking. It reads: "And he gave it for his opinion, that whosoever could make two ears of corn or two blades of grass to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."

You see, then, that the raising of two blades of grass will make you of more value than the whole race of politicians, and, in my opinion, if you raise but one blade the result will still be the same. But, indeed, in the field of agricultural discovery there still seems to be boundless room. The books say that neither Indian corn, potatoes, squashes, carrots nor cabbages were known in New England until after the sixteenth century. Who knows how many new vegetables are yet to be invented or improved? Fame may have something in store for you in that line. Your name may yet be carved on the perfect watermelon of the future. Old men can remember the advent of nearly every improved agricultural implement which we now consider indispensable. It is the happy combination of farmer and mechanic who is yet to achieve triumphs in the field of agricultural inventions. Then, there is the great vocation of teaching agriculture and the mechanic arts in schools established for that purpose. This is new ground. The school established in Switzerland by Fellenberg, counted the first, or among the first, agricultural schools, was founded in 1806, less than seventy years ago; and most of the work in that line has been done since 1844, and still the surface of the ground has only been scratched. To those who have a genuine literary talent; a readiness in the use of written words; an ability to tell things so that people will read them; and, combined with this, have a practical knowledge of the subject of agriculture; I can say that, in the opinion of those who do not write on agricultural subjects, there is much to be done. A great deal is written on agricultural questions which is regarded by a careless and hard-hearted world as the perfection of balderdash; the sublimated quintessence of moonshine. But is there not some one to be for this country and this time what Arthur Young was for England at the close of the last century? A bold and bright man was Arthur Young. His account of a tour in France, prior to the outbreak of the French Revolution, is quoted, by every historian of that struggle, as a most faithful picture of the brutalized and degraded condition of the oppressed French peasantry, which led to the final explosion. Said Young, in the account of his tour: "The fields are scenes of pitiable management, as the houses are of misery. To see so many millions of hands that would be industrious, all idle and starving. Oh, if I were legislator of France, for one day, I would make these great lords skip again." Thus wrote Arthur Young, former reporter of the Morning Post, tourist, political writer and correspondent of Washington. He wrote many books, among them a work on Ireland and its agricultural condition and resources. The material for a portion of this work was collected in 1776, just one hundred years ago, and it is still quoted by the latest writers on Ireland. Young wrote, not only what he knew himself, but what others found out. The cattle breeding experiments of Robert Bakewell, who was not himself a writer, were described and commended by Young. Who of the graduates of this Institution will be our Arthur Young, to write agricultural books to be read a hundred years hence, and have it said of him, "He will be illustrious in all succeeding days, as long as the profit of the earth is for all, and the king himself is served by the field?"

To those who propose to follow the mechanic arts, it is unnecessary to say that it is the skillful mechanic rather than the soldier who now goes where glory waits him. This is the mechanic's age. He is the reigning monarch now, and we all take off our hats to him. He is the Prospero of this our island, and steam is the monster Caliban that does his bidding. I doubt if there is a man before me who would not rather wear the laurels of Captain Eads, the designer of that wonderful bridge at St. Louis, than to be President of the United States.

You enter the world's school, then, under favorable auspices, and it remains only that you improve your opportunities; and let me say that you cannot always tell from appearances who is capable of instructing you. The teachers of the world's school are not always in uniform. For instance, your orator undertook, one day, to air the nautical knowledge he had obtained by a study of Mr. Fennimore Cooper's sailors, who are only equaled in naturalness by his Indians, and, in about five seconds, had his ignorance set in order before his face by the gentleman he was kindly endeavoring to instruct. But who would have thought that the quiet gentleman in a frock coat, writing in an office, with a pencil over his ear, had really followed the sea for years? Such, however, happened to be the exact situation. You will find that rough looking men, illiterate men in fact, are often exceedingly well posted on some one or two things. If you ignore such you will lose something. And

this you will discover, that men and women with naturally good minds, but who, from ignorance of writing, are unable to keep a diary, journal or memoranda of any kind, have frequently a very tenacious memory of matters which have come under their personal observation. The true method of investigation is that pursued by the newspaper reporter, who forms no theory in advance, but, on his arrival at the scene of a fire or a fight, takes the statements of all within reach without regard to "age, sex or previous condition of servitude." In the world's school, unless you are willing to accept all available information from all possible sources, you will never be a good scholar.

There is a maxim, often quoted in connection with education, viz: that "half a loaf is better than no bread," but I may also be allowed to remark that one blade of a pair of scissors is precious little better than no scissors at all, and so it is not well in this world to devote a year of precious time to a study which cannot be mastered in twenty years. Take, for instance, phonography, one of many systems of short-hand. A knowledge of this art, by which I mean the art of verbatim reporting and nothing else, while doubtless a good thing to have, is not a prime necessity to one man or woman in ten thousand. The mass of reporters and writers for the press get along without it, and many of the best reporters who have ever lived have been unacquainted with it. Yet how many thousands of people, who really had no occasion to study it, have wasted time and money in the attempted acquisition. How many thousands, deceived by the ease with which the theory of phonography is understood, have gone far enough to discover that they could not get practice enough in all the leisure hours of Methuselah to make them good short-hand reporters. A pile of double-ruled paper as large as this room could be constructed of the note-books of people who, after months of practice, have found they could not report even the slowest sermon, and on trying it found themselves struggling with the pot-hooks which represent "My beloved brethren and sisters" when they should have been making a crooked mark for "Amen." These people have simply tried to make a century plant bloom at two years old, that's all. Had they been wise they would have devoted their two years to something that can be learned reasonably well—well enough to be used—in two years. Newspaper men, who really may be supposed to need phonography, as I have said, get along without it. They find it easier, in many instances, to sit comfortable while the entirely original, unprepared and impromptu discourse is being delivered, and then, approaching the speaker after he has concluded his remarks, hear him say, "Why, my dear sir, I was not expecting to have my hasty remarks appear in print, but if it would be an accommodation to you, I can let you have the heads of my address, just a synopsis you know." Whereupon he proceeds to draw from his right-hand coat-tail pocket the complete manuscript.

The remarks made on the subject of phonography apply also to ineffectual or insufficient efforts to acquire a knowledge of the violin, and especially the flute. In regard to the latter instrument especially, not only self-interest but humanity to the neighbors demands that you should not waste your time in abortive tootings. If you feel it your duty to retire for a season from the haunts of men, and forsaking everything else, cleave only to the flute until you become its master, it is well, but do not under any other circumstances touch that instrument.

Having warned you not to attempt the mastery of really desirable accomplishments, unless you are sure that you have the aptitude and the leisure for their perfect acquirement, let me earnestly entreat you not to commit the great error of wasting golden hours in the discussion of matters which are of no vital importance. Beware of societies for the diffusion of useless knowledge; assemblages of people who know nothing to discuss matters of which nobody knows anything. Remember that the Almighty is the only being who is omniscient, the claims of various learned societies to the contrary notwithstanding. There are some things you will never know, and it is a good plan not to rack your brains over those things. The exact age of this world, for instance, can never be ascertained. Do not worry your mind by efforts to fix the precise hour in the forenoon at which the process of creation began. In these days when "science" is talked about by gentlemen whose knowledge of the correct spelling of the word science is a recent acquirement, I know it is dangerous to disparage what is called "scientific investigation." To speak lightly of such exposes the speaker to the danger of being called "ignorant" by people who spell it with two g's, but still I will risk this frightful calamity by expressing the conviction that years devoted to labor which results at last, not in the discovery of a fact in nature, but merely in the elaboration of a theory are wasted years. "What shall it profit a man" is, after all, the question. What does it profit a man to handle over a large number of skulls and shout

with rapture when he finds a monkey's skull which resembles his own? He cannot know, after all, that that particular monkey was his relative. The glow of family pride which comes over him at first is soon dampened by the dreary reflection that there may be a mistake somewhere; that the depression in the monkey's forehead which gives it its startling resemblance to his own may be exceptional, may have been the result of accident in youth, a blow from a coconut in the hands of an irate parent, or something of that kind.

The paths of glory lead but to the grave, and the paths of this sort of "scientific investigation" lead us into the mazes of painful uncertainty. Our ancestral gorilla eludes our grasp like the air-drawn dagger of Macbeth. And if he did not, what then? Is there any present or practical good to be attained by dwelling on his merits or demerits, or in tracing painfully the line which leads from us to him, realizing, perhaps, that of late years the family has degenerated?

But somebody, not a scientist, may ask, "Do you declaim against all investigation of the mysteries of Nature?" Certainly not. Consider the grasshopper, how he grows. He is a mystery. Whence he cometh and whither he goeth, we cannot tell. Find out, if you can, why a miserable insect which a child can crush beneath its foot ravages whole States, while man with all his boasted resources seems powerless to resist him. Mysteries! secrets! if you would investigate them, the world is full of them. The forces of nature, electricity and the rest, have existed from the beginning, but how long has man known of their power, how much does he know now? The lightning flashed before the blinded eyes of Adam, but how long since the electric spark became not the terror but the friend of man? Steam curled up from the kettle of Tubal Cain, but how long since man knew how strong were the shoulders of the prisoned vapor which now bears so many burdens. Charcoal lay in the ashes of the first fire kindled by man on the earth, nitre formed on the walls of the cave and sulphur lurked in the earth, but how long since man knew that these substances, harmless apart, were, linked together, a black conspirator who without warning can tear a city or a mountain to fragments. No man can say that further investigation on these lines will reveal nothing. How long is it since gunpowder, supposed to be the most powerful of all explosive substances, was found to be to nitro-glycerine what a boy's strength is to a man's. Investigation! there is room for enough of that to fill the next thousand years, during which the question of our primitive gorilla-hood can be suffered to rest.

In the world's school, as in the district school, a great hindrance to study is too much whispering, too much noise, too much talk. The present age demands and admires action—not words. Said an intelligent gentleman, speaking the other evening of the British House of Commons: "A great orator is a great nuisance and a great bore." It will, I think, be so considered in this country some day. It is certainly a consummation devoutly to be wished. If any of these young ladies or gentlemen have a habit of keeping still until they have something to say, they can rest easy in the belief that the world is coming around to their fashion. I think even now if Demosthenes were living, and were to repeat his experiment of the pebbles, he would meet with little sympathy. At this time, and, I may remark, in this State, where we are so little advanced in the practice of Agriculture—the oldest of human vocations—that the failure of a single crop reduces us to the condition of Indians when the buffalo fails to put in an appearance, and a piteous cry for "aid" goes up from one end of the State to the other; in such a State there is little time for speech-making. The world needs, nay more, will have, men of action, not of mere words, either spoken or printed. A volume of speeches is not a very enduring monument, generally a fading and perishable one; a fine bridge, a noble aqueduct, a row of tenement houses, built by generosity not avarice, a beautiful farm-house—such are the monuments men should leave behind them. It is the impatience of the world with talk that leads to Carlyle's "Hero Worship," and such grim books as Cromwell and Frederick; and who that reads these books does not imbibe a feeling of respect for men of action, rather than the men of pamphlets, speeches and proclamations? Who, whatever may be his idea of the career, as a whole, of the first Napoleon, does not, in reading that last chapter save one in Carlyle's "French Revolution," stand an admirer of that young artillery officer, Bonaparte by name, as he stands amid his guns at four o'clock in the afternoon of that October day, waiting the approach of that bloody mob of Paris who succeeded as rulers those "great lords" whom Arthur Young hated? They are moving forty thousand strong; their stray shot rattle on the staircase of the Tuilleries; they are very near. "Whereupon thou bronze artillery officer, 'Fire!' say the bronze lips." Roar and roar again go his great guns, and "it was all over by six" said citizen Bonaparte in his report. The mob which had cut off the heads of many speech-makers had met at last a man of action.

And yet, what is called a "talent for affairs" is not

inconsistent with the possession of a kindly spirit, manifesting itself outwardly and visibly in perfect courtesy. Some of the busiest men I have known always found time to be civil. In the world's school you will find that your progress and happiness depend much upon your treatment of your fellow-students. The nineteenth is a good century for firm men; it is a bad one for bullies—even of the pious variety. Lord Chesterfield was never wiser than when he exhorted his son always to be the friend, but never the bully, of virtue. This you may depend upon, that you may lead your class but you will never drive it, except, perhaps, after the manner of the Irishman's horse of which his enthusiastic owner exclaimed, "Bedad, he's dhruvin' everything before him." And as you cannot safely domineer over your fellows, so you may be sure you cannot long deceive them. The stolen composition will be found in your desk; the plagiarized speech will be detected. Blinder than the blindest bat that fluttered in dark Egypt's deepest darkness are those who put not their trust in God or man, but in tricks. Little traps, set by little men, are daily knocked to pieces beneath the very noses of their sagacious contrivers, and the world's derisive laughter rings out at "Strategy, my boy!"

This, then, in your intercourse with your fellow-students of this world, is the chief end of life: to be a gentleman; and this includes the ladies, for a lady is but the feminine of a gentleman. To be a gentleman you have the world's encouragement, nay more, you have an angelic warrant; for what says Thackeray in the "End of the Play:"

"A gentleman, or old or young!
(Bear kindly with my humble lays.)
The sacred chorus first was sung
Upon the first of Christmas days.
The shepherds heard it overhead,
The joyful angels raised it then;
Glory to Heaven on high it said,
And peace on earth to gentle men."

But I must not keep you here listening to words which, after all, may not be worth your remembrance, and which, in the hurly burly of that world which soon, very soon, will open up before the youngest here, you will scarcely find time to remember; and yet the blessing and benediction of any human being, even that of the sightless beggar by the wayside, is worth the having.

Young men, young women, crowding forward from the by-ways into the broad highway of life, may you do well the work that is waiting for your hands, realizing the obligation spoken of by Lord Bacon: "I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."

May your lives resemble not the desert's bitter stream, which mocks the cracked and blistered lips of the fainting, dying traveler; which but adds horror to the fiery desert and sinks at last into the burning sands, to which it brought no verdure, no gladness, from which it received nothing but poison and a grave. May the course of your lives find no counterpart in the sluggish course of the dull bayou, a fungus among streams, which winds and doubles and winds again through miles of rank vegetation, which curtain its dark course and shut out from its sullen waters the glad some light of day; a waveless, tideless stream in which reptiles of hideous shape crawl and glide and swim, and which at night seems to lie still in the darkness and listen to doleful and mysterious voices. May none of you ever live isolated from your kind, like those lakes which lurk amid dark, once volcanic mountains with no visible inlet or outlet; deep, self-contained, solitary, giving back no reflection save the dim images of scorched and barren rock, and splintered peaks; lakes on which nothing lives or floats, which hide forever in their dark bosoms everything cast into them.

But may your lives be like the river which rises amid the pure snows of the bold mountains; which, hurling itself over the cliffs, answers back the wild, free eagle's scream; which forces its way through the rocks that would impede it in its search for the valley; which slakes as it goes the thirst of the deer, and washes the roots of the pine tree from which the flag of the far-sailing merchantman is yet to fly; which turns the rude wheel of the mountain mill, and whirls in its eddies the gathering sawdust as it speeds from under the whirling, glittering teeth of steel it has bidden to rend the logs it has brought them. It grows wider and deeper and more silent and yet stronger, as it flows between smiling farms and thrifty villages which owe their existence to the bounteous river. At night it sends its mist over all the valley and half way up the hills, like sweet Charity who silently wraps in her sheltering mantle all the sons of men. It carries on its bosom all floating craft,—the light canoe, the slowly drifting raft, the arrow-like steamer. In time, its wavelets give back at night, in dancing gleams, the thousand lights of the great cotton mill, and anon, its waters part before the prow of the new-built ship, as she glides down the ways to the element which is henceforth to be her home. Thus goes the shining river, the ever useful, ever blessed river; best friend of toiling man; fairest thing from the creative hand of God; thus goes the river to mingle at last forever with the sunlit sea.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

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A. A. STEWART, Manhattan, Kansas.

If some men would go home and go to work instead of standing around the street corners, howling about hard times and abusing the county and town in which they live, it would be better for them and the country.—Girard Press.

The Winfield Courier says:

"Capt. J. H. Folks, of Wellington, besides being a newly married man, is editor of the Sumner county Press, Secretary of the State Senate, one of the Regents of the State Agricultural College, Secretary of the State Editorial Association, the coming man of Southwestern Kansas, and also business manager of the INDUSTRIALIST, a spicy paper published by the students of the Agricultural College. Go in, Captain, we will back you and bet on you."

Industrial Education for Women.

We have received a circular of the "Woman's Educational and Industrial Aid Society of Kansas," in which the objects of the Society are thus set forth:

"The object of this Society shall be to secure to the State of Kansas an Educational Institution wherein women will be trained to skilled labor in the mechanic arts, qualified for commercial pursuits, or fitted for the discharge of household duties, as they may severally elect for themselves.

As a rule, boys are practically educated while girls are unpractically educated, and when, in consequence of resources, they are compelled to toil for a livelihood, their ignorance renders them inefficient.

Kansas, having so liberally provided for the higher education of the rising generation, certainly will not fail to provide for the industrial education which will qualify young women for the emergencies of life, render desolate women self-sustaining, and enable them to win bread and shelter for their fatherless children.

Only by widening the range of woman's industry can we hope to advance her wages. While there are numberless women asking to do some one thing the capitalist will

command their labor at starvation rates.

If necessity constrains a woman to toil for a livelihood, it is her privilege to choose that occupation to which, by taste, temperament and education, she is best adapted; and the interests of humanity will be far better promoted by aiding women who seek by honest industry to walk above reproach, than by peopling Magdalene asylums with wrecks from the gutter."

These objects, it seems to us, are already very largely met, and can be entirely so, by our excellent State Institution at Manhattan. It is unfortunate that that school is called an "agricultural" college, for that term falls very short of expressing the true character of the institution. To call it an industrial college would be more nearly correct. One of the prime objects of that college is to furnish a place where women can be "trained to skilled labor in the mechanic arts, qualified for commercial pursuits, and fitted for the discharge of household duties." This is just what the Manhattan school now offers. It is just what it is doing for every young woman in our State who desires to avail herself of its advantages. As a matter of fact, young women are now engaged there in learning telegraphy, printing, book-keeping, scroll sawing, the making of clothing, use of the sewing machine, household economy, and other kindred branches. We have not learned that the demand for instruction in these departments has yet trenched upon the supply. If the range of studies is not wide enough, we are sure that the wide-awake and capable instructors who are running that school would only be too glad to enlarge it to meet any demand that may be made. The endowment of the Agricultural College is ample to sustain a large, prosperous and well organized school. The State is already committed to its support. The school has been organized especially to meet, among other things, the very object set forth in the above quoted circular. There is no need "to establish" "an institution where women shall be trained to skilled labor in the mechanic arts," etc., for we already have one. Its organization, courses of study, equipments, spirit of instruction, all contemplate just this very thing. Its doors are open "without money or price" to any woman in the State who wishes an industrial education. Beyond this we do not see that the State is bound to go. Indeed, there is no legitimate call for it to go. Whenever the women of the State shall have availed themselves of the facilities already furnished for obtaining an industrial education; when the halls of the Agricultural College will no longer accommodate those who desire to enter them, then the State will doubtless be ready to meet the new demand upon it. At present, the supply seems fully to meet the demand.—Lawrence Journal.

Moderation is the silken string running through the pearl chain of all virtues.—Fuller.

Boiled Down.

Y & .—a town in Kansas.

Paola has 1,600 population.

The grasshoppers are leaving.

Junction City has 1,800 population.

Wathena has a first-class paper mill.

The scale of good breeding—B natural.

Marysville rejoices in a pottery at work.

The worth of a woman—double you, O man.

Clay Center prays the court to make it a city.

Leavenworth farmers will replant this season.

Compulsory education is a success in Connecticut.

The State Horticultural Society goes in for a State Fair.

Ellsworth Reporter wants the jury system abolished.

Missouri girls have the sweetest name out. Mo.-lasses.

Dickinson county breaks 80,000 acres prairie this season.

St. Louis is shipping aid to the Missouri g-hopper counties.

The Solomon valley has grain enough to supply the State.

Labette county farmers have organized to protect the birds.

The July term of the Supreme Court is adjourned to October.

Leavenworth expects to have a manufactory of wire goods.

320 whites, 100 blacks and 3 females in the State Penitentiary.

Dead g-h's are worth \$30 per ton at Kansas City as a fertilizer.

There are fifty-seven women editing newspapers in this country.

Sumner county has had nine newspapers; eight of them are dead.

Last season a Salina firm shipped \$73,000 worth of wheat to Denver.

Salina proposes to supply Central Kansas with the best quality of coal.

Mrs. Prosser, of Emporia, has finished a quilt containing 5,553 pieces.

Potato bugs in western New York are rivaling Kansas grasshoppers.

Ninety-five bushels of corn to the acre the last grasshopper year—1867.

Douglas county spends \$2,000 for seed corn and the farmers want \$12,000.

What word is always pronounced wrong, even by the best scholars? Wrong.

The Marysville News reports 1,188 g-hoppers in the crop of one prairie chicken.

A Marysville man has invented a grasshopper reaper which will clean forty acres a day.

And now Salina says the rock in the hills around there contains thirty-two per cent. of iron.

Judge Kingman refuses to be comforted because the g-hopper has devoured his garden sass.

The grasshoppers ate so many houses at Fort Scott that forty-nine persons now live in one tenement.

Prof. Whitman, of the Agricultural College, wants all strange bugs sent to him at Lyndon, Osage county.

Topeka has 2,500 persons of school age; buildings valued at \$125,000; and spends \$15,000 for salaries of teachers.

Just as people are beginning to talk about eating grasshoppers, it has been discovered that the hoppers are wormy.

One of the great causes of hard times, says Barnum, is "the number of soft hands waiting for light work and heavy pay."

A late Junction Union had 173 different items in its "Pen, Paste and Scissors," and started them on an outside column easy to clip.

Thus far the hoppers have injured but twenty of the seventy organized counties of Kansas, and have not appeared at all in more than one-half of the whole number.

THE INDUSTRIALIST.

SATURDAY, JUNE 12, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Organize!

If any State is indebted to the heroism of the Revolution for present liberty, stability, peace and possibility, that State is Kansas. And if any people should publicly manifest their pride in an ancestry, who, a hundred years ago, wrenched from the clutch of ignorance and power so grand an heirloom, it is the people of Kansas. The world will assemble at the Philadelphia Centennial to see in what manner, and upon what scale, the Americans of 1876 honor the Americans of 1776; and Kansas can neither afford to absent itself, nor to present a scrimped, grasshoppered wreath—because, despite the scourge of 1874 and 1875, this State has had many years of plenty, and looks trustingly and reliantly for decades of golden harvests. To feel present pain keenly is human, but there is a large measure of divinity in that spirit which rises above the present and draws inspiration and courage from the future.

The Kansas Managers have blocked out a wise and feasible plan for a separate building in which Kansas products and interests may be distinctively presented. The State is not to be swallowed up or overshadowed by richer and stronger ones. It has a distinct individuality; and, after its Managers have secured for it an individual recognition, it will not, unless the grasshoppers have also devoured its old spirit, withhold the ten thousand dollars needed for the erection of the proposed building, nor the articles from every county to crowd it with the proofs of the fertility of our soil and the evidences of Kansas thrift, skill and pluck.

The invitation to the clergymen of the State to observe the coming fourth of July as a day of national worship, and to call for contributions, will undoubtedly be accepted. These men believe in a God; a real, loving, practical God, who put a resistless arm to the wheel of the Revolution. Their worship on that Sunday will be of a national God; and worship which is not willing, when necessary, to express itself in greenbacks as well as prayers is, like all other dead-beatism, not a genuine article.

The Patrons, Masons, Odd Fellows, and, through some channel, all the people, will aid to the extent of their ability, if an opportunity be offered. Every celebration should have its ballot-box for dollars and nickles, and every orator should form his audience into rank and lead them to that poll, depositing a good fat ticket himself. It would be the most effective passage in his speech. What is needed is the organization of the people. They will be found more than willing. The Managers have done their part splendidly; let every body back them, and do it by companies in column.

Corn No King.

It is often asserted that in Kansas corn is king. During the period when immigrants came into the State annually by tens of thousands, corn may have been acknowledged sovereign, but in 1872 it was ignominiously and permanently deposed. Corn at \$1.00 per bushel, and fifty bushels to the acre, may receive homage, but at fifteen cents a bushel it is despised both by Grangers and by anti-Grangers.

Corn cannot be king because it will not bear transportation. Cotton was king because the cost of its transportation to distant markets was small compared with its full value, its value being great in proportion to its bulk.

At three cents per ton per mile, by railroad, the entire value of the following agricultural products would be entirely consumed by the freight for the following distances:

	MILES.
Cotton, at 19 cents per pound,.....	12,666
Wool, at 30 cents per pound,.....	20,000
Butter, at 20 cents per pound,.....	13,333
Cheese, at 18 cents per pound,.....	6,666
Beef, at 4 cents per pound,.....	2,666
Pork, at 3 cents per pound,.....	2,000
Wheat, at \$1.00 per bushel,.....	1,111
Corn, at 50 cents per bushel,.....	555
Hay, at \$10 per ton,.....	333

The above figures show us that Kansas, on account of her remoteness from the great centers of population, cannot amass wealth by exporting grain.

Whatever products she exports should be concentrated; those that will bear transportation, to the remote markets in the mining regions west of us, or on the seaboard, east.

Of all agricultural productions, those which are called animal products tie up the greatest value in the least bulk. Some of them have been given above.

Every animal may be considered as a machine, and all of the above products as manufactured articles, and he who, by the use of these animate machines, transfers the coarse grain of our cultivated fields and the rich grass of our native pastures, which, in spite of the drouth, grasshoppers, and cold of last year, was never more luxuriant than now, into these valuable products, is a manufacturer. By labor and skill he has rendered the products of nature, which were comparatively worthless, into products of value. Manufactures bring wealth.

Then let every animal in the State of Kansas be well cared for, and their numbers be increased until all the coarse grains, that will be raised in the State shall be consumed within her borders. When our hill-sides and high prairies shall be covered with cattle and sheep which, under an intelligent system of husbandry, shall be made to transform all the grain grown in the valleys and the spontaneous growth of our native pastures into fine beef, butter, cheese and wool, then will the Kansas farmer have

money, because the surplus products of his farm will bear transportation.

In no distant future, Kansas will stand second to no State in the Union in the representation of animal products. Corn will be an efficient subject, but it never can be king in Kansas.—Prof. Ward.

Sullivan's Tree Compound.

There are two reasons why this mixture claims notice. First, it is a Kansas production; and second, it apparently belongs to a class of humbugs more to be dreaded than the insect tribes it professes to kill.

Some time since we received a package of this compound with special request that we should try it. Most of the mixture broke loose from the package before reaching us, but enough remained to test its quality in the laboratory, with the following result:

PROF. GALE, Pres't State Hort. Society,

DEAR SIR:—I have examined, as you requested, this Sullivan's "Compound for destroying the apple-tree borer." It is a very clumsy mixture of charcoal, crude sulphur and blue vitriol (sulphate of copper.) It is one of those nostrums which Prof. Riley, and every other intelligent entomologist in the country, denounces unqualifiedly as humbugs. In the above mixture the sulphur and charcoal are perfectly inert—can exert no influence whatever—being practically insoluble in the plants juices. The sulphate of copper will exert no other influence than as a slight antiseptic.

Yours Respectfully,

WM. K. KEDZIE.

Prof. Riley says of the same compound:

E. GALE:—The enclosed is, upon its face, so ridiculous and absurd that it is a wonder any orchardist can be humbugged by it. I have so often held up to scorn these patent nostrums, which claim to cure all ills that plants are subject to, that I do not feel like going over the ground again for want of time.

We take it this is as fair a test as can be reasonably asked of us. Whenever a man professes, as in this case, to destroy "all kinds of pests," bark louse, borer, canker worm, &c., with a single preparation, it is safe to keep it at a distance. It may not be as dangerous as nitro-glycerine, but it has lightening effects on the pockets of that class of orchardists who can't afford to spend any money for a horticultural journal. Let the compounders of compound patent mixtures try their compounded humbugs on their own trees for a year or two. We can afford to wait.—Prof. Gale.

There are at present 77,000 geographical miles of telegraph line on the globe, which shows an increase of 19,834 miles within the past six years.

A complete line now runs from San Francisco across the American continent and the Atlantic ocean through Europe and Siberia to the mouth of the Amour on the eastern confines of Asia, while branch lines connect India, Japan and Australia. It is anticipated that the number of miles of line to be built in the next six years will be double that of the past six.

THE INDUSTRIALIST.

SATURDAY, JUNE 12, 1875.

Several hoppers, more or less, on the Hill, but not doing much damage.

Major Adams has lost a moss-agate from a sleeve-button, and—he wants it!

For a regular, tearing, blinding, dusty day, put Thursday, June 9th, ahead of any day this season.

The book store was burglarized last Wednesday night. The knaves were too sensible to visit the banks or the printing offices.

Prof. Platt has removed his household goods to Wabaunsee, there to remain during vacation. The Professor has temporary charge of the Congregational church at that place.

Prof. Riley is teaching the people of Missouri how to utilize the grasshoppers. One of the Professors of the Warrensburg Normal School pronounced both grasshopper soup and grasshoppers roasted, as served up by Prof. R., delicious.

Profs. Lee and Ward took a trip up the country, as far as Blue Rapids, last week. They report as follows:

The whole country is beautiful. Splendid farms in the valley of Fancy Creek. A few farmers are keeping sheep; they find it pays. Blue Rapids a lively town; woolen factory, flouring mill, paper mill, plaster mill, all in operation, and not one-fourth of water-power utilized. Herd law in operation in Marshall county. The grass is waving in the streets and suburbs of Blue Rapids and Irving. Few cattle to be seen on the prairies. The Professors pronounce themselves anti-herd law men. On their trip of over one hundred miles they passed through a few grasshopper districts,—perhaps five or six miles in all. Crops look splendidly.

During the examinations one of the most numerously visited and most attractive rooms was the carpenter shop, and many hearty comments upon the quality of the workmanship were made by the visitors. The tables, bureaus, brackets and various articles turned upon the lathe, opened a good many eyes to the fact that a great deal can be accomplished in a comparatively short time by intelligently directed effort. There was the work; it bore the closest inspection and spoke for itself. Of the members of the classes in the Mechanical department the following persons, in addition to other work, made the following articles: Ella Child, 5 brackets; Jennie Mails, 3 brackets; Wm. Ulrich, 1 large scroll saw and emery grinder; Geo. K. Davidson, 1 stand, 1 desk, 2 brackets; Jas. La Tourrette, 3 brackets; Julian Meeker, 1 table; Henry Rushmore, 1 desk, 3 brackets; Lewis Fuller, 1 table; Chas. Dow, smith shop, rings, clevis, lock, cranks for scroll saw machines, etc.; Frank Records, wagon shop, 2 wheels, scroll saw frames; Geo. Gale, 1 desk; Henry Smith, 1 table; Chas. Streeter, one desk and book-case, 1 swivel chair; Wm. Maltby, 1 table, 1 bureau, 5 brackets; Wm. Knipe, 3 tables, 12 brackets; Frank Leasure, 1 table, 6 brackets; Frank Landon, 1 table, 6 brackets; Jno. Proctor, 1 desk, 1 bureau, 2 wheelbarrows, 2 tables, 4 hot-bed sashes, 7 brackets; Ezra Shinkle, 4 brackets, 1 fruit-stand, 1 model frame.

HORTICULTURAL ITEMS.

Examined the forest plats to-day, June 10th. The black walnut trees have made from twelve to eighteen inches growth.

American chestnut mostly dead. The same is true of the mountain ash.

Native willows, two years from cuttings, are now from four to eight feet high.

White ash have grown from eighteen to twenty-four inches, and are looking exceedingly well.

The box elders have grown from eighteen to twenty-four inches and are looking splendidly.

Evergreens, such as escaped entire ruin last season, are making a slow growth, except red cedar.

Deciduous cypress very slightly injured by the

defoliation of last year. These are growing on high ground but are all alive.

The Ailantus, two and four years old, were killed back from six to twelve inches by the winter, and are growing very vigorously now. These trees, through a little tender care, may be valuable on high points where the soil is liable to be blown away by the wind, if cultivated, as they have not only retained their own soil but accumulated a large quantity from the adjoining plats.

The green ash have made from eight to sixteen inches growth. The four year old trees of this variety were planted four feet each way upon a very dry ridge. At that distance the soil was left too much exposed and as a consequence the roots were laid bare by the winds. Many of them have died. The two year old ash were planted in rows four feet apart and from four to twelve inches in the rows. These are making a very fine growth and will soon need no further care than a little thinning out.

FARM ITEMS.

Weeds, drought and grasshoppers; and of these dry weather is the greatest. Eight acres of timothy, which one month ago promised a full ton and a half to the acre, must now be pronounced a total failure. First, the blades rolled up and the lower joints and herbage changed from a vivid green to a sickly yellow hue. Then yellow patches appeared about the field. Finally the half-fledged grasshoppers scaled the stone wall and gave the crop its quietus.

Now that the grasshoppers are promising soon to leave, and the fight we hope is over, it is in order to go over the field and count the slain. The timothy above mentioned may be charged to the grasshopper or drought account, as you like. It is certain that if it had made a sustained growth the grasshoppers would not have injured it as they now have.

Of our twenty acres of winter wheat seven acres of late seeding have been badly damaged. If the hoppers should leave now it would make nearly a half crop. The remaining thirteen acres are uninjured, although needing rain, and promise a good yield.

Field peas have been uninjured by dry weather or grasshoppers, and promise an immense yield.

Oats uninjured, although needing rain. With rain soon we shall begin to talk of a great oat harvest.

The season thus far has been very favorable for barley. A great growth of straw has been made and it is heading finely. A good growth of straw usually ensures the crop of barley. Straw is the weak point with this crop. Too often the crop does well until about the middle of May, then our hot suns force it prematurely and the straw is very short. This makes it very difficult to harvest; the farmers talk of getting down the old razor and "lathering the stuff," and get disgusted generally. The truth is barley loves a slow season and a deep, mellow tilth. England has ever taken the lead in the production of this staple. Her slow, moderate seasons are admirably adapted to its growth. In this country we must sow early, very early, upon land that has been plowed deep and is rich and mellow. With these precautions barley will rarely fail to pay well.

"But to our tale." The grasshoppers are paying altogether too much attention to our barley. They have gnawed a fringe three feet wide around the entire piece. But it's an even race; in one week more the beards and husk of this grain will not be just the thing for a steady diet; the hoppers will decide that it isn't "hygienic," and they will seek their rations elsewhere.

Millet and Hungarian, except in one or two small patches, are untouched and looking very finely.

Of corn we have not lost a hill from grasshoppers. It is doing well; ditto the weeds. We are trying to act upon the old maxim that "one year's seeding makes ten years weeding." It takes work and the straightest kind, "but there's millions in it." Last year we kept one or two pieces nearly absolutely free from weeds; there we have no weeds this year and we shall have none next. Upon other pieces an occasional weed went to seed; to undo the work of this "occasional weed" will make it lively for three men and two mule teams for a month.

Students' Column.

All quiet on College Hill. Not at all lonesome at the Boarding House.

The Boarding House is being put in thorough repair for students next year.

Kenny Davidson is still on the Hill. He busies himself part of the time making brackets in the carpenter shop.

Clay Crouse remains on the Hill this vacation. He is counting grasshoppers, playing base-ball and making remarks about the injurious effects of hard labor in hot weather.

The members of the College base-ball club, now on the Hill, have united with the players of Manhattan and formed a Base-ball Association called the "Riversides." The association has twenty-five or thirty members. Frank Kehoe is captain of the first nine. They have been challenged by the Junction City club, and a match game is to be played in Manhattan next Tuesday.

Maynard, Griffing and McKelvey are working on the farm, and Streeter and Proctor in the nursery. Byron Pound and Ed. Ulrich are doing manful work in Ulrich's brick-yard, and Wm. Ulrich is cutting stone caps and sills for the new building in first-class style. Lofinck is nailing laths on the barn. George Gale is breaking sixty acres of prairie on his farm near Milford. His sister Ella is keeping house for him, having exchanged literature and the engraver's chisel for the broom and bread tray, whereupon we arise altitudinously to remark emphatically that—that's business!

GRANTVILLE, Kas., June 8th, 1875.

EDITOR INDUSTRIALIST:—Would be glad to see something in your paper concerning grasshoppers in Riley county. In this vicinity they are doing much damage; however, we are not much discouraged. Have strong hopes of grasshoppers leaving this county; probably two-thirds of them have wings and are ready to emigrate. Many farmers replanting corn. Expect good crops if the grasshoppers will leave by the last of this week. We have had sufficient rains with prospect for more to-day. Received paper this p. m. Good for our base-ball club. Wish them success next time. More anon. Respectfully, H. C. RUSHMORE.

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A charge of \$1 per week for the use of instruments.

SHORT-HAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

TELEGRAPHY

Four miles of line, twenty instruments, and daily instruction and drill, by an experienced operator, in sending, receiving and office accounts, reports and book-keeping. No charge, except for blanks, say \$3. Special course of lectures, by Prof. Kedzie, on electricity, battery, etc.

THE INDUSTRIALIST.

SATURDAY, JUNE 12, 1875.

Our Industrial School.

But a few days ago our Manhattan correspondent, in a very readable letter, gave an account of the progress of the examinations at the Agricultural College, and many interesting particulars concerning the farm.

The attention of the writer of this article has been directly called to the workings of the above-mentioned institution, since what is called the "new departure" commenced. A high personal regard for the gentleman last called to the head of the institution, and confidence in his courage, honesty and intelligence led to a watchful interest in the enterprise in which he risked so much. This led to visits to the institution and the formation of an acquaintance with the professors, who, with three exceptions, were suddenly called from other fields of labor to prosecute what was neither more nor less than an educational experiment.

The Commonwealth has the pleasure of announcing that the experiment is a success, and that Kansas has an Agricultural, or to speak more according to the facts, more descriptively, we may say, an Industrial College, which is more nearly the thing than any other of the institutions which have been called into existence by the act of Congress granting lands for the purpose of maintaining institutions devoted to imparting instruction in agriculture and the mechanic arts.

An educational institution to be a success must have several "ingredients." There must be competent instructors, a reasonable large body of students, and in this country a sort of popularity. The public, local and general, must take an interest in the institution. These requisites our Industrial College possesses. The instructors are men of sense; men who are not called "old Smith," or "old Brown," or anything of that kind; men whose spinal columns are not covered with lichens, and who know what o'clock it is.

The students seem a hearty set of young people. The boys in the printing office, seemed young fellows who would not develop into slouches, "blacksmiths" or tramps; and the girls did not seem devoted to a diet of moonshine, slate pencils and vinegar.

The people among whom these teachers and students prosecute their labors seem to be in sympathy with them. They filled the church in which the commencement exercises were held, last Wednesday night, full, and more than full, and gave the young graduates a good send off. The home paper, the Nationalist, always gives the college prominence in its columns, and thus works for the interests of the town, as a decent newspaper always does.

While these conditions remain, the institution will continue to be a success, even though the Legislature should continue to be penurious. On a very limited capital the college has already decided to "pick up and move," and in a few months will have new buildings completed and the old ones remodeled, all within a mile of Manhattan, instead of three miles as heretofore.

We set out only to mention the fact that in educational enterprises, as in others, "blood will tell." At Manhattan it has already "told," and for further particulars "see small bills," by which we mean, of course, the successive issues of the INDUSTRIALIST.—Commonwealth.

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FOR THE

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These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

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Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

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Special Courses in

KANSAS PRACTICAL AGRICULTURE.

Simple Tillage,
Farm Implements,
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Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
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185 Acres used by this Department.

Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Galloway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

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Kansas Forest Culture a specialty.

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Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

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Special attention paid to the habits and best methods of preventing or destroying Insects inimical to the Kansas Farmer.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, JUNE 19, 1875.

No. 9.

THE INDUSTRIALIST.

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A. A. STEWART, Manhattan, Kansas.

Boiled Down.

Singular—to see a garden walk.
The population of Olathe is 2,146.
Prof. Riley has sailed for Europe.
Splendid crops in Arkansas valley.
Farmers harvesting in Sumner county.
Topeka rolling mills are running full blast.
Blue grass three feet high in Cowley county.
Coffey county expects half a crop of peaches.
A Paola factory makes 40,000 matches per day.
The "soldier bug" eats the grasshopper. Queer taste.
Native mocking birds in Labette county talk good English.
Pleasanton, Linn county, is sinking a shaft for lead mining.
Abilene is to build a \$30,000 hotel for the railroad eating-house.
The Dodge City Messenger quits, and says there is no room for it.
The Atchison Champion is having its paper made at Blue Rapids.
Many miles of fencing in Jefferson county blown down last week.
The young man who fell into a reverie was not seriously injured.
Senator Martindale reports magnificent crops in Greenwood county.
A tow boat will naturally burn quicker than other kinds of water craft.
Jewell county has a girl fifteen years old and five feet eleven inches tall.
The crow of a blackbird recently killed contained over 400 small grasshoppers.
The consolidation of the Union Pacific and Kansas Pacific will take place July 1st.
Twelve millions forest and one million fruit trees were planted in Nebraska last year.
Le Seur county, Minnesota, offered \$5 per bushel for hoppers, and gathered 227 bushels.
The Western Union telegraph company has made \$750,000 extra out of the Beecher trial.
After two years trial Edward Makins pronounces sheep-raising in Davis county a success.
Emporia Ledger says that salt will keep chinch-bugs from a wheat field. Use a barrel to ten acres.
The Burlington Patriot says that a thin sprinkling of lime will keep grasshoppers from destroying crops.
The Towanda cheese factory uses one ton of milk a day and makes 200 pounds of cheese worth 14 cents.
Several farmers in Shawnee county saved their crops by fighting the hoppers. Mr. Kline killed 100 bushels.

Self-Supporting Work for Woman.

[An Essay by Miss Ella M. Gale, a member of the Engraving class of the Kansas State Agricultural College.]

It has been a popular idea from time immemorial that woman is not capable of supporting herself. She must always hang or rest in the hands of some unfortunate of the masculine kind. This notion is fast giving way. She thinks it is time to step forth and show the world that she was not made simply for an ornament or an almost useless appendage to society, but that she can support herself if, in the whirl of human events, such a thing becomes necessary. Even the oldest of old fogies, with their barbaric ideas of "woman's proper sphere," can but admit that she is fast gaining ground, despite their time-honored creeds and their attempts to hinder the march of justice, and that she will, in this the nineteenth century, yet stand forth in all her perfect womanhood, while her works will proclaim to the world that she can "do for herself."

Let us glance back into the past, a few moments. Fifty or seventy years ago our honored grandmothers were considered well educated if they could read, write and cipher. They were supposed to have a superior education if they knew enough of what we term the "common branches" to teach a small district school. Only in case of those whose matrimonial prospects were dimmed by undeniable homeliness was the cultivation of the mind deemed necessary. It has almost been considered equal to one of the seven wonders of the world if a woman could be found possessing at the same time a good face and a good mind. It has never been considered a sign of a weak mind for a man to possess a fine face. Why then, we ask, is the difference between him and her? The answer is this: he is always supposed to have cultivated his mind, while she has been taught that beauty was all she needed to carry her through the world. But this mistaken idea, and the old saying "she is too pretty to be wise," will soon be classed among the silly notions of the past. With such an education as woman formerly enjoyed it is not strange that when she wished to earn her livelihood she found herself surrounded by impassable walls, built up by public opinion. Even a quarter of a century ago if a woman undertook to support herself in any way but that one which has been termed her "God appointed mission," she was hailed with scoffs and sneers, and even slander, by many men—so called—who wished to monopolize all the lucrative employments themselves. But now we can thank Heaven that these narrow views are, under the light of truth, giving way to good common sense.

Considering all the obstacles woman has had to meet and contend with, and the rapid advancement she has nevertheless made in science, literature and art, can we call it anything but wonderful? Yet she is far from holding her true place on the stage of life. It is the efforts of the active present that cause us to turn our eager and hopeful

faces to the future for a full and final settlement of our case. I think if the Good Father spares our lives to see the close of the present century we will look back to what it has done for woman, and call it emphatically the "woman's century."

Woman does not wish to crowd man from his place, but she wishes to stand on equal ground with him. She wants equal pay when she works as well. Without interfering with his work she can find stations of usefulness which she is just as capable to fill, and perhaps more so than he. A few of these vocations we will now mention.

Let us first speak of those which seem to belong almost exclusively to woman, such as housekeeping, sewing, laundrying, dress-making, millinery, etc. The first we have named is particularly adapted to woman. It is a graceful and fine accomplishment to be able, in the words of the homely old phrase, to "keep house properly." If a woman has a home of her own she has the power to make it a pleasant, happy home or the reverse. But all woman kind are not blest with a house to keep. They are dependent on themselves for support. It is for such that we wish to speak. In the laundry and sewing room many poor women are dragging out a miserable existence. They toil on from day to day unmindful that they are undermining their very lives, and that sooner or later the whole superstructure of their being will fall to the ground. And the miserable pittance which they receive for their toil is found insufficient to defray their expenses. This is because these trades are so overcrowded. Our great cities are thronged with poor uneducated women who find it impossible to earn a penny in any way but with the needle or washing machine. Many of these women were once rich and happy, surrounded by comforts and luxuries, but by some stroke of misfortune have been reduced to poverty. If in their youthful days they had been instructed in some useful trade, instead of spending so much of their time frivolously they would now, when hurled from wealth to poverty, have something to fall back upon by which they could easily support themselves; and thus, according to the common rule of "supply and demand," those who remained in the laundry and sewing room would receive higher wages.

Dress-making and millinery are trades especially suitable for woman, because I believe it is agreed that woman possesses more taste; but these trades are, like those before mentioned, over-crowded. Teaching is a profession also over-crowded—there seem to be at least two teachers for every school,—so let us turn our thoughts to find some place where there is room.

Printing and telegraphy are trades as easily learned by woman as man, and she has just as much right as he to command her \$50 or \$75 a month at these trades. In sticking type her fingers are found much more deft than his, because they are generally constructed with more delicacy of touch. At the type case as well as in the

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JUNE 19, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

To Orchardists.

There are several apple orchards planted with trees, it is said from southern Ohio, which have proved uniformly unproductive. Can any persons give us the history of these trees? Will any one give us a reason why they do not produce fruit? And have Kansas raised trees been productive when planted by their side? Any light on this subject will be thankfully received. Address, Kansas State Agricultural College, Manhattan, Kansas.

What Shall I Plant?

Questions like the following come to hand in some modified form, with the implication that it must now be determined beyond a doubt what should be planted anywhere in the State:

"Will you please name the best ten varieties of apples for planting in Kansas?"

This is a representative question and is asked so often in some form as to demand a brief notice. Men who have given little attention to the subject of fruit culture usually suppose that it is an easy matter to reply to this class of questions. They seem to think that there can be no difficulty in reaching a conclusion in relation to the best varieties of fruit for planting in Kansas, and that the man who has an orchard planted and has raised one or two crops of fruit should know all about the whole subject. Now, while there are not wanting men who will answer this and kindred questions without a sign of hesitancy, the real facts in the case are such as to lead the best informed to answer such questions, if at all, with great caution.

The interests involved can be counted only by hundreds of thousands. The decision of this question has cost some men in Kansas almost fabulous sums, and yet those men are only just beginning to learn what to plant. There are also difficulties in the way of the orchardist and fruit culturist which the inexperienced do not appreciate. There are the marked differences of climate as compared with the east, and also very marked differences within the bounds of the State. Then again, there are marked differences of soil and subsoil in the various sections of the State; and these variations occur frequently in the same neighborhood. Hence what will succeed at one point will utterly fail at another. What we planted successfully a few hundred miles to the east may be worthless here. And often that which promises well at first may not fulfill the promise of its earlier years. Sometimes

trees that are comparatively worthless when root-worked may prove valuable when top-worked. Trees which are now apparently doing well may blight next year past recovery. Or the malady which is threatening the existence of a certain variety now may be only temporary in its effects.

It is impossible then to answer safely questions like the above without many reservations. The nearest approach which we can make to an intelligent answer is to combine the experience of our best horticulturists throughout the State. The State Horticultural Society has appointed a committee to do this work and report the result of their observations and inquiries to the annual meeting in December next. Such a report will be valuable in proportion to the time and attention given to the matter, but still any possible report for the present can only be regarded as a report of progress. Each year's experience will develop new facts. As observation extends to every part of the State, to every possible variation of soil and to every possible variety of treatment, the recommendations of horticulturists must become more minute and reliable.—[Prof. Gale.

Mangel-Wurzels.

The cultivation of mangel-wurzels and sugar beets for stock feed deserves more attention than it has hitherto received at the hands of the farmers of this State. Even if there were no risks attending the growing of the great staples corn and oats the above statement would hold good. Animals no less than men flourish best upon a variety of foods, and of all the means within the reach of the general farmer for correcting the effects of constipating foods like corn, roots are the cheapest and best. Precisely the effect of green grass in May we may have during the entire season by giving an occasional feed of roots. For milch cows mangel-wurzels and sugar beets are invaluable; they are greatly relished, and, without communicating any pungent disagreeable flavor to the milk as turnips do, they add wonderfully both in the quality and quantity of the dairy products. For sheep and swine mangels have a scarcely less value than for cattle. I have seen a large herd of pigs kept for several months in a thriving condition upon an exclusive diet of turnips and mangels. In feeding roots care must be taken, especially with sheep and swine, that the pregnant females of the herd be not overfed. A liberal feeding of raw roots is a fruitful cause of abortion, and rather than incur this risk it will be advisable to feed the females separately or feed the roots sparingly to the whole herd. During the past spring one of the best sows belonging to the college aborted from an overfeed of frozen mangels.

But mangels and sugar beets seem to possess an exceptional value for own State. During the exceptionally severe season of 1874, although no rain fell from the middle of June to Sept. 10th, and during this time grasshoppers devoured nearly every other green thing upon the college farm, a crop of nearly three hundred bushels per acre of mangels was grown.

At this writing it is late to talk of growing mangels or sugar beets the present season, but where seasonable rains have left the ground moist a crop of this invaluable cattle food is still possible. Upon lands that have been denuded by grasshoppers, where replanting is contemplated, I would earnestly recommend the planting of at least an acre of mangel-wurzels as supplementary to what must be a short crop of corn. Almost any soil that will grow corn will grow mangels. Sow in drills thirty inches apart, and at the rate of three pounds per acre. I might say in this connection that Lane's Imperial Sugar Beet is the best. It will generally give the largest yield; it is the most nutritious of all field beets; and it will keep the best. After the plants are well up, so that the rows can be plainly seen across the field, "bunch out" with the hoe, leaving the bunches about ten inches apart in the rows. Cultivate about as you cultivate corn, and at the last cultivating thin out to single plants. If your land is clean you will be surprised at the small amount of hand labor this involves. Harvest before the severe frosts have set in, and if you have no root cellar dig a pit four feet wide and two feet deep and see that the roots stowed away in this are dry. Cover well with straw and a few inches of earth. During the sunny days of winter they can be hauled to the barn as needed.—[Prof. Shelton.

An Address.

Noble L. Prentis, the editor of the Commonwealth, delivered the address to the graduating class of the State Agricultural College, at Manhattan, a few days ago. The Nationalist of last week published it in full. We commenced reading with the intention of hastily skimming over it to get the good points and sit in judgment on the bad ones. After reading the first sentence we could not lay down the paper until we had carefully read every paragraph and every line. We have read it through three times, and have read the peroration at least a half dozen times more. It is certainly one of the best addresses ever delivered on any occasion in the State of Kansas. It is full of good things, and is very good reading for Sundays as well as week days. It possesses the rare qualification of being exactly suited to the auditors and the occasion. It is perhaps a little too radical on the question of the classics, but aside from that it is brimful of humor and good solid sense, and concludes with one of the most beautiful and eloquent passages we have ever read.

If we had room in this issue of the Telegraph we would be glad to publish the address in full. It is a production which does credit to the head and heart of Mr. Prentis, and we are proud that its author is a citizen of Kansas.—Waterville Telegraph.

THE INDUSTRIALIST.

SATURDAY, JUNE 19, 1875.

Wheat is being harvested.

Manhattan proposes to shoot off its own fourth of July.

It has been very warm for the past few days, the thermometer indicating 102° in the shade.

The crops in Riley need rain while those in Davis, Dickinson and Saline are reported as lacking nothing in this respect.

Mr. C. B. Rotrock, of the Minneapolis Independent, gave us the pleasure of his acquaintance—only he didn't stay long enough.

The common sense of the essay of Miss Ella Gale, which appears in this number, is in decided contrast with the usual "marigold" productions. Read it.

Col. Dennis and Mr. McDonald, attending court, gave us a pleasant call. Mrs. Dennis accompanied her husband and visited the college farms and buildings.

Rev. Dr. Hill, of Kansas City, inspected the progress of work on the new buildings, and punctuated a pleasant visit with hearty laughter excited by the "points" in Prentis' address.

The grasshoppers cleaned a large field farmed by Mr. E. B. Purcell. The plows are at work, and if the omnivorous, jumping dead-beats have left by the 20th, corn will be planted with the expectation of securing a good yield.

Over 5,000 pounds of wool were delivered at the Kansas Pacific depot last Wednesday, by Messrs. Winkler, Lewis and others, for shipment to Leavenworth. Fifteen or sixteen hundred dollars cash is a good thing to have these times.

According to our fancy Griffin has decidedly improved the appearance of the Nationalist by "leading" his editorials. We believe it was the only one of the exchanges which did not make this usual distinction between original and extract matter on the editorial page.

A. A. Stewart has deluded us into the belief that the condition of his health and affections renders a visit to his relations in Missouri indispensable. He starts Monday—puts Mr. Jeff. Davis in his place for a few weeks. His faithful work merits a rest, and we trust he will enjoy it to the full.

Rev. Wm. B. Cary, of Solomon City, has made another valuable contribution to the geological cabinet of the College; and upon the return of Prof. Whitman further notice of the contents of the box will be made. Mr. Cary is a natural naturalist and keeps his eyes open and his mind posted. Many thanks.

The dry weather in this belt is seriously interfering with the prospect of crops on our farm, but the cattle are in splendid condition. Good rains would help amazingly, but things might be very much worse. The grasshoppers have about disappeared and no further damage is now apprehended from them.

Speaking of rapid type setting the fastest table work done anywhere, this hot weather, is presented in the score of the base-ball match printed in another column. It was gotten up in just the time required to borrow it from the Nationalist. As Griffin will be in the picked nine of the "big fats" against the "spindle shanks," our sympathies are on that side.

Mr. W. A. Sternberg, one of our old students in the Telegraph department, has been appointed agent and operator of the Kansas Pacific railway at Buffalo, a station west of Hays. Mr. S. has been working as an extra operator and clerk since he left the college, but is now permanently located. He is a young man of great energy and considerable ability, and we wish him abundant success.

The College is greatly indebted to Hon. Wm. A. Phillips for one of the most valuable donations yet received, consisting of the statistical atlas of the United States recently published by the government. Part first shows the Physical Features; part second, Population; and part third, Vital Statistics; all based upon the results of the census of 1870. The volumes will be bound and placed in the library for general use. Col. Phillips could not have made a more useful and acceptable donation, and if he wants to keep on doing such things "Barkis is willin'."

Thirty odd citizens of Topeka having requested it, the address of Noble L. Prentis appears in the Commonwealth. The Kansas Farmer makes extended extracts and remarks as follows:

Elsewhere will be found extracts from the excellent address of Noble L. Prentis, delivered at the Agricultural College, May 26, 1875. The whole address is replete with strong, live and progressive ideas, enlivened by the irrepressible humor which Prentis will never be able to control. We commend its hearty common sense and the freedom from cant and humbug laudation which usually kills the agricultural address. Mr. Prentis has exceeded the expectations of his friends in this effort, and deserves our sincere thanks.

The pleasant visit of his Honor, J. A. Austin, Judge of this Judicial District, put the INDUSTRIALIST in such a flutter the other day that somehow or other it failed to say so at the proper time. When a Judge strolls around the office as if he were estimating the probable value of fonts if offered by the sheriff, it is enough to give anybody palpitations, especially when the "business manager" keeps an obituary notice in type, ready for publication at the shortest warning, which announces that the "subject" thereof had died six months before this paper was started, and, therefore, that no claims would hold against his estate, even if he had an estate. We congratulate Judge Austin upon having won by months of hard work on the bench the best of titles to his approaching vacation.

The contractors are pushing the work on the buildings. The flooring for the first story of the barn has arrived and is being laid. Most of the lathing is finished in this story, and but little remains to be done before it will be ready for the plasterers; the second story is about ready for them now; they will probably begin next Wednesday. The carpenters will likely be through with the barn in a couple of weeks, and there seems no doubt whatever as to its readiness before the opening of the next term.

Mr. Winne is driving the work on the mechanical building with equal success. The window frames of the first story are all in place, and the west wall is ready for the joist of the second floor. The other walls will be up before August, some delay having occurred in the shipment of the frames. It now looks as if the masons would be done by the last of July. The building is plain, but neat and tasty, and like all the plans designed by E. T. Carr, looks as if it was built for a specified purpose. The barn is coming out much better than we expected, and the rooms will be large and accessible.

Base-Ball.

Hot, hotter, hottest day of the season was last Tuesday, when the Frontiers of Junction City played the Riversides of Manhattan a match game of base-ball on the grounds of the latter club. In spite of the terrors of a cloudless day with but little wind and a centennial temperature, a goodly number of ladies and gentlemen of Manhattan collected under Mr. L. R. Elliott's shade trees to enjoy the triumph and exceedingly easy victory won by "our boys." The game was called at two o'clock, by the umpire, Mr. A. A. Stewart, and the players proceeded with usual promptness, playing for three hours and forty-five minutes. As the score speaks of the different members of the two nines and shows their merits I will just say that the umpiring was excellent, very prompt, and its fairness acknowledged by all. Won't any one feel jealous, will they, if I say

that Frank Kehoe is the "right man in the right place?" It is fun to see him handle his men, and they all seem to have full confidence in his orders. At the close of the second (whitewash) inning we heard a Junction City man say, "Never mind, Kehoe can't pitch like that more than three innings before he'll give out." We very distinctly heard a board crack on the back-stop during the ninth inning any way, and from that and the total score we presume the man was correct! Well, our boys dished up things at the Adams House for them, and, so far as we learn every one had a nice time. I am indebted to Mr. Jackson for the following copy of the official score:

FRONTIERS.					RIVERSIDES.				
BATMEN.		POSITION.	PLAYS CAUGHT	LEFT ON BASE	BATMEN.		POSITION.	PLAYS CAUGHT	LEFT ON BASE
Tamplin	P	4	1	0	2	Platt	3d B	3	6
Pinkham	C	3	2	1	0	Howard	C F	1	7
Pierce	1st B	5	1	0	2	Kehoe	P	1	7
Ross	2d B	2	1	2	1	Rathburn	R F	4	4
B. D. White	3d B	4	1	0	0	Ponnd	C	4	4
W. C. White	S. S.	3	1	0	3	Ulrich	E F	3	4
H. H. White	L. F.	1	3	0	1	Rollins	S S	4	4
Mackey	R. F.	2	1	1	1	Higinbotham	2d B	4	4
Burress	C. F.	3	1	0	1	Griffing	1t B	3	5
124 11					45 28				

SCORE BY INNINGS.

CLUBS	1	2	3	4	5	6	7	8	9	TOTAL.
Frontiers.	0	0	2	3	0	1	0	5	1	12
Riversides.	2	7	2	8	3	1	11	6	5	45

Four white-washings on the Frontiers.

Time of game: 3 hours and 45 minutes.

UMPIRE A. A. Stewart. SCORERS { H. M. Geminy,
F. C. Jackson.

Yours,

TRIBUTARY.

DR. PATEE.

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INSTRUMENTAL MUSIC.

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SHORT-HAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

[Concluded from first page.]

kitchen she is found to make less unpalatable "pi" than he. In telegraphy she is found to possess as ready an ear to detect the slightest differences of sound as man.

Scroll sawing is fast becoming an open trade; all, both rich and poor, are wanting beautiful brackets, card baskets, picture frames, music holders, etc., to adorn and make beautiful their homes. Ladies, while you want these fancy and useful articles, did you ever think it was a kind of work as easy and fascinating and fully as refined as embroidery, and that you might as well saw them out with a little bracket-saw as to pay others for doing it for you. And you who wish to make your own living, did you ever think it was profitable work—because such things are always in demand?

Closely connected with the above is wood carving. It surely is a beautiful thought that with the aid of a few carving tools the graceful forms and outlines which we see in nature can be copied on wood. Everything in nature comes to our aid with suggestions for this art. Each little flower, each rock, each leaf and insect gives food to the mind, and the imagination can thence convert it into something useful. The comfort and attractiveness of many hours can be traced to this simple art. No art is attended with more pleasurable results than this. Think of the rich and elegantly carved ottomans, frames, chairs, tables, mouldings and church furniture so pleasing to the eye; and think, too, it is all the work of human hands. Did we ever ask whose work it was? And did the thought ever come to us that perhaps we could do that kind of work easily and profitably? Wood engraving is like carving, fascinating and profitable. With a proper knowledge and practice of drawing a woman can make as many fine "cuts" as man, and of course have equal pay. Some have taken this up by themselves and, after a few months, have become proficient enough to earn \$40 or \$50 for a week's work. Some of the finest illustrated volumes were embellished by women. Indeed they seem to excel in delicacy of outline and elegance of finish. There have been turning lathes constructed very lightly for woman's use, and she can thereby turn out articles both useful and ornamental, which are ever in demand.

Phonography is another profitable work. With careful study in a few months a woman can learn to report even the fastest lectures. Photography also is a trade which requires taste and skill, and really is more of a woman's work than man's. Women as post-office and store clerks are no longer objects of condemnation and ridicule.

Then there are the professions into which women are not forbidden to enter. Many of our leading medical colleges have thrown open their doors and admitted women on equal terms with men to learn "the divine art of healing." As preachers women have not had equal opportunities with men, but by some cases it has been illustrated that she is not deficient here, although she has been scouted at as "strong minded." With sufficient education and taste in that direction a woman can make as good a lawyer as a man. Women as a class possess minds equal to those of men, and men themselves will allow that "she is not slow of speech." As artists and sculptors women occupy a prominent and high position. In authorship and journalistic ability she is found to compete with man. She is not now obliged to hide behind masculine "non de plumes" to insure the publication of her writings.

As orators and lecturers women are taking their places with the most successful of men.

Time will not permit us to mention half the employments which might be pursued by women, but from what has been said we can see that the so called "woman's sphere" is widening. There are many new avenues opening their gates to welcome her. She is advancing to higher fields of usefulness. She is securing for herself a broader and more thorough mental and physical culture.

We have each been by a wise Providence gifted differently. We can scarcely find two minds alike, yet I think we can each find something to do; some work for which we are especially fitted; some little corner in this great world left especially for us. And although we meet difficulties innumerable, barriers almost impassable, discouragements and disappointments with out end, yet, if we struggle on with fixed purpose and unyielding determination, ever keeping in sight the goal ahead, we may some time see the day when woman's efforts will be looked at with something besides contempt. Opportunities will be given her for the cultivation of all her powers, and by responsive human hearts will she be encouraged to take that position in life which she can fill with the greatest ability and satisfaction. Then the world will be the better for her having lived in it.

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JERSEY, BERKSHIRE,
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ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

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Special Courses in

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Simple Tillage,
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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, JUNE 26, 1875.

No. 10.

THE INDUSTRIALIST.

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A. A. STEWART, Manhattan, Kansas.

Boiled Down.

The iron bridge at Clay Center is finished.
The Wyandotte city schools have 813 pupils.

The people of Wichita are planting fig trees.

Early rose potatoes in Morris county June 14.

Sixty-nine inches is the regulation for wheat in Wilson county.

T. C. Henry put the "headers" into his 1,380 acre wheat field last Monday.

The A., T. & S. F. railroad company has bought the King bridge shops at Topeka for \$40,000.

Mr. Peter Moriarty, editor Council Grove Republican, died last week.

The next report of the State Board of Agriculture will be the best ever published.

Shawnee county pays \$12,000 for the site of the new Insane Asylum.

Over 200,000 acres of land were sold by the A., T. & S. F. company during year ending May 1st.

It is said that 15 grains of bi-carbonate of soda to the quart will keep milk from turning sour.

The flying grasshoppers have done no harm in northwestern Kansas.

The University lands are appraised at an average of \$3.75 per acre.

The wheat crop of Morris county will be 300,000 bushels.

Wheat in sumner county averages about thirty-three bushels per acre.

The Arkansas valley wants 1,000 reapers for its wheat crop.

The summer travel is late and scant.

During last year \$8,000,000 were lost in newspaper enterprises.

An army of hoppers, ten miles long and forty wide, is devastating western Iowa.

Ulster county, New York, is burning up with dry weather.

The Abilene Chronicle reports rye six feet seven inches long, and timothy doing well.

Abilene wants a second elevator to handle the wheat crop.

Mrs. Lincoln's insanity is attributed to spiritualism.

In Yeddo 60,000 persons are studying the English language.

An unusually heavy rain storm deluged Kansas City last Monday. Two bridges on the Kansas Pacific were swept away.

July first Wells, Fargo & Co. turn over their business on the K. P. to the Union Pacific Express Company.

The Junction City expedition for Arizona pulled out Monday. It will be 100 days on the road and is supplied with provisions for one year.

Pruning.

[An Essay by Marion F. Leasure, a member of the class of Practical Horticulture of the Kansas State Agricultural College.]

Questions once regarded as unworthy of attention, are now found to be of great practical importance. Such is the case with pruning, the theme of this discussion. If we travel over the country and examine shrubbery, orchards, fruit gardens and vineyards as they now are, we would be surprised at the ignorance and carelessness of those who have them in charge. Again we would be surprised at hearing nurserymen and orchardists who are careful observers and successful cultivators, advocating such various methods of pruning. One prunes everything, another prunes nothing. One prunes to some ideal standard, another prunes only to carry out the evident designs of nature, and to assist nature.

There are a great many men who seem to think that trees were made to prune; that by a thorough and severe course of cutting and carving, they can shape any tree to suit their own peculiar taste. But this is impossible; for every tree has its own form and it cannot be persuaded to deviate from that form by any gentle means.

As a general rule, all trees should be allowed to take their natural form, and all pruning should be confined to simply removing weak and crowded limbs. In ornamental pruning this law may be slightly modified, but in all orchard work extended and vigorous pruning at all seasons of the year is not desirable. Such a pruning in the dormant season may give a vigorous growth, it is true, and in the summer it may hasten fruit bearing, but it will shorten the life of the tree. Many orchardists prune recklessly and often ruin their orchards. Such men would do well to heed the rules laid down by Downing, Warder and others.

We cannot be too careful in using the pruning knife. We may use the knife in removing useless limbs, and should never allow numerous arms of the tree to contend for the mastery; one alone should be protected, the others should be subordinated by breaking or twisting as soon as possible. For however beautifully developed a tree grows in this way, or however well balanced it may appear, there is always danger of its splitting down when heavily laden with fruit. When it seems necessary on account of the size of the tree, or from other cause, to allow such limbs to remain, we may permanently secure them by inarching strong limbs on either side so as to avoid all possibility of the damage indicated above. It is equally important to have the lateral branches regularly distributed on different sides. Those who are noted for their continual pruning give us this law as a maxim: "In winter prune for wood growth, and in summer prune for fruit." We ask permission to make one correction in this law and then we think it will be a good one. The correction is this: In late winter prune for wood growth, and in summer prune for dead trees. To those reckless pruners we would

also say, that they had better lend their knife to the first boy they meet or throw it in the well. We will now notice for a short time the man who prunes away nothing.

If we examine his trees we find them bushy masses of wood, and, if somewhat advanced in age, too thick to produce healthy fruit. They are allowed to grow, to bear heavy crops, and to die pretty nearly their own way. This method of treatment may work very satisfactorily with a tree in its native clime or in its wild state, but it must be remembered that many varieties of our fruit trees have been brought from warmer countries than ours, and in reality many kinds of our fruit of the present day are artificial. They owe their origin to artificial means and require therefore a system of culture to correspond. There is no doubt that absence of due care in the management of a great many varieties of our fruit trees after they begin to bear, is the one great original cause of their present short life and liability to disease. We therefore earnestly desire the attention of fruit growers to this important subject and trust that they will give it a sufficient amount of care and consideration. Prevailing views have formerly favored much pruning, but the tendency is now apparently in the opposite direction. Some prune to excess, but a great many do not prune at all. Recent observations, however, lead us to believe that the pruning knife should be used, though with care. This is suggested by the laws of nature. Pruning has the power of increasing the growth of a tree in two ways.

1. If we suppose that a certain amount of moisture is furnished by the roots to the buds and branches of a tree by cutting off one half of the branches at the proper season, the whole supply of nourishment is directed to the remaining portions of the tree, which will consequently grow with double the former rapidity.

2. Again when a tree becomes enfeebled in its growth, the thinness of its inner bark and also its small sap vessels render the upward and downward circulation tardy, and the growth of the tree is checked to a great extent. By careful pruning, however, the entire force of the nourishing fluid is directed to a small number of buds which rapidly send out new and vigorous shoots.

The tree may, by this method of treatment, be induced to grow vigorously for a long time. This treatment is certainly very valuable in the case of young trees. But with respect to large and healthy trees, we recommend the following rule presented by Mr. Downing: "Every fruit tree grown in the open orchard or garden as a common standard should be allowed to take its natural form, the whole effort of the pruner going no farther than to take out all weak and crowded branches." We should remove those branches which are situated near the center of the tree, and can not secure the light and air readily and are continually crowding the other limbs. We will now notice the leaf and its relations to the development of wood.

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JUNE 26, 1875.

J. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Answers to Correspondents.

TOPEKA, KAN., June, 1875.

I intend to go into the butter business. I can buy butter now very low—from 10 to 15 cts. per pound. In winter good butter in this market is retailed at 30 to 35 cts. per pound. Do you think that butter packed in June will keep until winter. G. S.

Answer.—There will be great risk in packing butter made by different parties, and often carried a long distance before you receive it. Store packed butter is always regarded with distrust in all our large markets. Butter properly made and packed will keep for a long time. You had better furnish jars or firkins to the farmers in your vicinity, and have them pack it as they make it. If they observe the following suggestions they will furnish you an article for which you can afford to pay them a few cents above the market price. If you keep it in a sweet cellar until winter, it will bring you the highest market price:

1. Do not heat the cows by driving too fast, especially just before milking.

2. Take off the cream as soon as the milk begins to thicken at the bottom of the pan or crock.

3. Keep the cream in a cool place until it is churned. Hang it in the well if you have no better place.

4. Make the butter solid before you take it from the churn. If the cream is of the right temperature it will come solid. If it comes too soft harden it with cool water. Pour off a part of the butter-milk and set the churn in a tub of cool water. If it comes very soft don't pack it.

5. When the butter is well formed in the churn wash with pure cold water until the butter-milk is all out. Do not handle it much or it will make it salvy.

6. Salt with pure finesalt, (Ashton or Ondoga factory filled,) about one ounce to the pound. Let it stand in a light cool place for several hours. Then work it enough to remove whatever butter-milk there may be or surplus brine. Don't leave it streaked and don't work it too much.

7. Pack it firmly in jars or firkins. Keep the surface covered until the package is full, then cover closely and keep a strong brine over it until it is sold.

8. Keep your butter in a clean cool place free from all odors. If your cellar is used for other purposes you should wall up a small room for your butter. It would be well to dig that part of the cellar deeper.

Good butter cannot be made without great pains. Never pack a poor churning if you desire to get a good price for your butter.—[M. L. WARD.]

We introduce Mrs. M. E. Cripps to our readers by the following from among many testimonials. She will take charge of the Woman's Department at the opening of the coming term. The first is from Judge Valentine of the supreme court, the second from Mrs. Stephens the well known editress, and the third from "Jennie June" of the "Graphic:"

TOPEKA, Mar. 19, 1875.

MRS. M. E. CRIPPS:—Dear Madam: Yours of the 17th inst. has been received. In answer I would say that I can cheerfully recommend you to the position of dress-maker and milliner in the Kansas State Agricultural College at Manhattan. I would say to the President and Regents of the institution that I regard you as entirely competent for the place. You may use this letter if you choose as a recommendation or I will give you a formal recommendation. My wife joins in the recommendation.

Yours truly,

D. M. VALENTINE.

NEW YORK, March 10, 1875.

I learn, with more than friendly interest, that Mrs. M. E. Cripps is an applicant for the position of superintendent of dress-making, or dress-making and millinery combined, in the Kansas State Agricultural College, in which the industrial arts are taught. I have known this lady ever since she received the first award from me as chairman of the millinery, dressmaking and fancy work committee at the Crystal Palace nearly twenty years ago. We then awarded her the first medal for millinery. In dress-making I think she did not compete, but I know that she took a high stand at that in her establishment in New York, which was one of the most fashionable in the city. There was no head of an establishment who, during her business career, had a finer reputation for superior taste and artistic skill than Mrs. Cripps. I was in a situation to know this, because the articles she made always had preference for the illustration of fashions in the magazines that I edited. In her business relations she was a prompt, honorable and industrious woman. As a lady and the mother of a family she was thoroughly respected and respectable. In short I knew her well for years in the city and can say nothing of her that is not greatly to her credit in every relation of life. Personally I would gladly use any influence in my power to aid her in any wish she may have set her heart upon.

Respectfully,

ANNA S. STEPHENS.

NEW YORK, March 9, 1875.

I have great pleasure in stating that I knew Mrs. M. E. Cripps many years in New York as a thoroughly capable, and intelligent business woman, able to direct a large establishment, and always noted for the good sense and judgment, as well as taste, that marked her designs and methods. "Graphic." "JENNIE JUNE."

One of the finest specimens of binding turned out of any establishment, east or west, is Martin's Hand-book. It contains more valuable information concerning types, paper, printing, binding and the history of Kansas printing and papers than can be had in any book ten times its size. Like everything from the State Printing Works it is more than first-class.

The Fourth will have a peculiar interest this year, because of the near approach of the Centennial. While Kansas as a State has suffered severely these last two seasons yet all Kansans are not candidates for the poor house—in fact very few are. And those who are not, and who realize the advantage of a good advertisement at the Philadelphia Centennial, should be afforded every opportunity to contribute to the erection of a separate building as proposed by the managers. Let us have a little grit sandwiched between the "aid" howls. A respectable slice of solid "cheek," if it be merely "cheek," will at least give variety.

Congressman Phillips, Gov. Green, Chas. G. Cox and others will speak in Manhattan on the third, and the announcement is the pledge of a good thing. The Manhattan Cornet Band will furnish music for the occasion. Turn out and bring your quarters along.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

TOPEKA, KANSAS.

Papers Pamphlets, and Books neatly bound.

CHEMISTRY AND PHYSICS

THE most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis. Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry. Photography, Household Chemistry.

Special course in Chemistry for Past-Graduates.

The Laboratories are fully furnished with the best philosophical apparatus and the largest assortment of chemical apparatuses and reagents west of the Alleghanies, all of which is for the use of the students.

DR. PATEE.

S. M. FOX,

BOOKSELLER & STATIONER,

Dealer in

Fine Stationery, Pocket-Books,

Envelopes, Gold Pens,

Blank Books, etc.

No. 127, Poyntz Avenue, Manhattan. (3-9.)

THE INDUSTRIALIST.

SATURDAY, JUNE 26, 1875.

New beans plenty in the market.

One hundred in the shade yesterday.

The grasshoppers and hot breezes are "on the wing."

Mr. Jacobus' grove across the Kansas has been selected as the place to hold the 3d of July celebration.

W. H. Mize and W. Purinton, of Junction made us a call. Mize says he can just furnish the best flour in Western Kansas, and wants people to try it.

Several "small boys" are inclined to make this office a loafing place. Now boys when you come around you should keep your hands in your pockets and your mouths closed.

The picnic across the Blue on Thursday by the Sabbath schools was largely attended. Several addresses were made by the teachers and greatly enjoyed by the little folks.

The essay on pruning by Mr. Leasure shows the practical nature of the instruction in Horticulture given by Prof. Gale. Mr. Leasure was a member of the class in Practical Horticulture last term.

Next Thursday has been set apart as the day to prepare the grounds for the 3d of July celebration. The citizens should all turn out and put the grounds in perfect order. The grounds are to clear up, stands, seats and other conveniences to erect.

The appropriation of \$7,500 by the Legislature to the Agricultural College has been so expended as to furnish 14,742 square feet of floor space. If fifty cents per square foot, in stone buildings, isn't economy we don't know anything about it.

Dr. John W. Hoyt who is visiting all the agricultural colleges in the United States for the purpose of reporting to government, made us a very pleasant visit. He was a National Commissioner of the United States at the Vienna Exposition and is thoroughly posted on educational matters. Appleton & Co. announce a forth coming work by Dr. Hoyt on "education in the old world and the new," which will be fresh, able and valuable.

A Gentleman slightly connected with this paper rode out to the farm the other day, and, as the weather was red-hot, he carefully emptied a coat off his shoulders into the wagon, and when he got back the wind had blown that coat several millions of miles out of the wagon. The gentleman, distantly related &c., now says that, as he is married, his domestic peace will be preserved from a compound fracture by the return of that duster to this office. Samaritans to the front.

MILFORD, Ks., June 11th, 1875.

DEAR PRESIDENT:—You said you wanted to hear from all the students and wanted us to tell you what we were doing &c.—so I guess I will demand your attention for a little while.

The crops look nicely. The farmers are happy trying to catch a glimpse of the sun through the cloud of grasshoppers which are rising and going—no one knows where—as soon as they wing out.

I want to tell you about a little "pleasure exertion" we have just had. Yesterday three or four of the young farmers got fish hungry, and so concluded to go fishing. As lunch baskets are a consideration on such occasions, and, fearing they could not find any of these good things without "us girls," they called us "necessary evils" and begged our company. We donned our sunbonnets and told them we were ready.

Accordingly yesterday noon a jolly load—more than half of which were our old students—set out for lake Eureka intent on having a good time. After following various cattle trails and roads, which

would invariably lead us to a stone quarry or a barn door, and after being told to go back a couple of miles and take such and such a road, or go round such and such a farm, about four o'clock, when we came to the long sought water, we all felt like exclaiming with the man who first found the lake, Eureka! Eureka!! We don't wonder he named it that if he had as hard a time finding it as we did. As for the fish I think one would be apt to exclaim Eureka for them too if they should happen to find any. About sunset we sat down on the grass to a neatly spread table and quietly partook of our evening meal. Every now and then admiring the sunset, which was indeed one of the most beautiful I ever witnessed. With the setting sun went the clouds, as did our feelings of admiration. The clouds soon threatened rain. The lightning and distant rolling thunder sounded anything but pleasant, as we were expecting to camp out. After a great deal of remarking which consisted of surmises, possibilities and probabilities of the weather, we girls sought shelter, while the fishermen were left in solitude to pursue their interesting employment. We applied for a night's lodging at the nearest house, where we were kindly received. As we presented such a deplorable condition, and looked more like fit subjects for an insane asylum, than for a respectable farm house, we had concluded, unless called for, we would not tell our names. But girls are forgetful, and through thoughtlessness one name was spoken in full, but by an inquiry by one of the party, as to why that name? the mistake was rectified, and immediately a nice young lady stopping there from Manhattan inquired "if we knew that person," one of us replied that she "had heard of her." She then told us who this young lady's father was, and other items of news. From that of course it was perfectly natural for each to ask some questions about this person, until we obtained quite an account of her, even to her looks, which she described. As she ended her description by saying "the farther off she was the better she looked," is it any wonder, as she was so near, she had to pinch herself to keep from laughing?

This morning we arose early and returned to the "camping ground," where we found our breakfast ready and waiting. Thanks to the instructions of the gentlemen's mothers, the coffee was excellent, but somehow the fish tasted remarkably scarce. After enjoying every thing to the utmost, and packing up the fishing lines and frying pans, we set out for home, a wiser, if not a happier company than when we started. We arrived safely—and, although we had a "splendid time," as every one said, yet, we think, "be it ever so humble, there's no place like home."

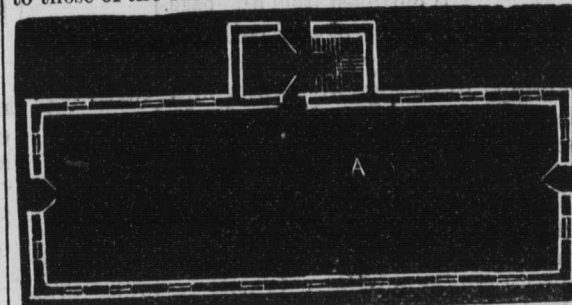
STUDENT.

The New Building.

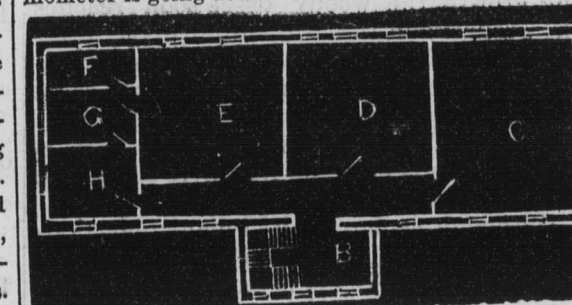
It isn't often that contractors give as good satisfaction to owners as Messrs. Rains & Winne are giving to the Regents. Mr. Carr, the architect, had prepared the plans and specifications with that care which experience ensures, and the contractors are doing just what they agreed to do and in a little less time than that specified. The result is that all parties are satisfied. Mr. Winne has the walls of the mechanical building ready for the floor timbers of the second story, and expects to finish all the masonry by July 15th. Mr. Rains began the plastering in the barn Thursday, and expects to finish that building by the time the masons are through with the shop, when he will have more time than he needs for its completion. They are doing good work and are driving it right along. It isn't a good place to loaf, because each of them is putting in a full day's work and neither will stop to spin yarns. Business.

The mechanical building is 38x102 feet, outside; is two stories high; stone range work; and has three gables, the one covering the vestibule hipping back into the main roof. The side walls run north and south, and are, therefore, at right angles

to those of the barn. The vestibule faces east. The

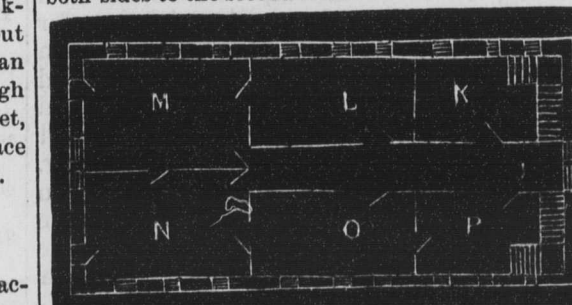


whole of the lower story "A" will be used by the Mechanical Department at the opening of the term, and Capt. Todd will have a room 35x99 feet for his benches, lathes, scroll saws, etc. No man will make better use of it; and next winter we fancy his classes won't take on so many airs (cold) when the thermometer is going down to see Sir John Franklin.

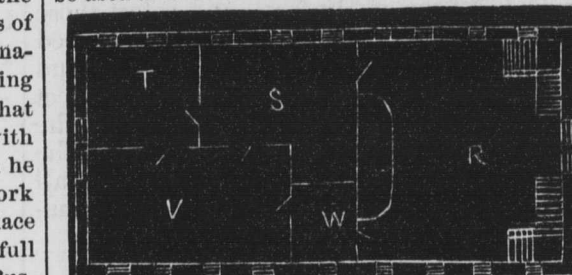


The second floor is reached by the stairs "B." The Printing Department will occupy the room "C," 26x35 feet. The wheel of the Gordon will revolve without any danger of "distributing" the imposing stone in the brevier small cap boxes, and thereby lessen the sorrow of A. A. Stewart. In "D" a room 30x32, W. C. Stewart will dispense lightning to the telegraph classes, and will be near at hand to furnish "press reports" for the INDUSTRIALIST when Griffin is publishing the Nationalist daily, and furnishing us the news for nothing. Mrs. Cripps, as superintendent of the Sewing Department will meet her classes in "E," a room 25x30, or if she prefers to use it as a kitchen laboratory and to take the ladies' room in the barn for sewing we shan't object. "F," 10x15 and "G," 10x15 are for Mrs. Werden's pianos, and "H," 14x15 for her recitation room. These rooms are arranged as shown for the purpose of shutting out the sound from the rest of the building as much as possible.

The following cuts show the plan of the barn. It is entered from the west door, stairs leading on both sides to the second floor:



Practical Agriculture, Prof. Shelton, will occupy "K," 17x26; Practical Horticulture, Prof. Gale, "L," 17x29; Botany, Entomology and Geology, Prof. Whitman, "M," 21x31; Mathematics, Prof. Ward, "N," 21x31; Elementary English and Mathematics, Prof. Platt, "O," 17x29. The Library may after while be found in "P," 17x26, but at present it will be used as a cloak room. On the second floor, "R,"



is an assembly room 42x43; "S," 21x29, the Chemical Lecture room, Prof. Kedzie; "T," the Physical Laboratory, 21x22, and "V," the Chemical Laboratory, 21x41. In "W," 10x19 the gray hairs of the venerable President will gently nestle about his gold spectacles as he dispenses Political Economy and discipline.

[Continued from first page.]

The leaf may truly be called the tree's laboratory; for by its assistance the tree is enabled to change air, water and earth into organic matter. It is the leaf that originates the woody tissue and makes the downward growth. The woody tissue formed in the leaf goes downward into the first joint of the stem and thence into the root. This may be proven by taking a leaf and using it as a single cutting. It will be found that the leaf will readily strike root from its base and so form an independent plant. This same leaf has the power of developing a second one like itself from the stem which supports it. This, by its upward growth, forms the second joint of the stem and the blade of the second leaf. By this descending growth the woody tissue soon reaches the ground and the substantial woody stalk is completed. Can we not readily see then, that by excessive pruning we destroy some of the most essential elements of plant growth? The very existence of a tree is just as dependent upon its leaves as the life of a man is upon his lungs.

Although we have raised many objections to summer pruning, we do not wish to discard it altogether. It is too severe summer pruning that we object to. If we have large, strong and healthy trees which continue to grow from year to year without producing fruit, we may then proceed to prune those trees severely in summer. By doing this we check the flow of sap from the roots, and if the pruning is repeated often enough, the probable result will be the development of fruit buds. The advantages of winter pruning are these: In a country with as mild a climate as that of Kansas, the roots of the trees are continually collecting a stock of nourishment during the entire autumn and frequently through the winter. Therefore, when we prune in winter, this whole supply of plant food goes to the remaining branches, while in the case of spring and summer pruning it is partly, or we might say, entirely lost.

We should so plant our forest trees that nature, to a large extent, will do her own pruning. This we know she will do; for we may examine trees standing alone on high and desolate prairie, among rough and rocky mountains, or in the dense and crowded forest, and there we find the most perfect models of fruitfulness and beauty. Yet these specimens have never been trained by the hand of art. They have reared their proud forms independent of the influence of the pruning knife, the saw or the hatchet. They have been sustained, directed and pruned by the hand of nature alone. Close planting in the forest will ordinarily secure proper form. Nature will care for her own with only a slight exception. For ornamental purposes, we should reject all varieties that have a tendency to grow to an uncomely form, and select those varieties which come nearest the desired form without pruning. For while the hand of art must control, it should be the object of the horticulturist, the orchardist and the forest grower to let nature stand in the front. He should ever remember in all his true culture to work in the aid of nature and in sympathy with her.

John Holmes, of Cowley county, says:

"I believe in blue grass, and brought sixteen bushels with me from Indiana; sowed eighty acres in the timber where the cattle run; sowed it winter before last; was a little afraid of drouth, but it went through last summer and is now a splendid stand.

TELEGRAPHY

Four miles of line, twenty instruments, and daily instruction and drill, by an experienced operator, in sending, receiving and office accounts, reports and book-keeping. No charge, except for blanks, say \$3. Special course of lectures, by Prof. Kedzie, on electricity, battery, etc.

VOCAL MUSIC.

Regular Instruction and Practice in the science and art of Vocal Music, without charge.

INSTRUMENTAL MUSIC.

Complete Course in **Harmony.**

The Piano, Organ and Guitar.

A charge of \$1 per week for the use of instruments.

Cut This Out!

It May Save Your Wife's Life!!

SUBSCRIBE

FOR THE

Industrialist!

SHORT-HAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

THE COLLEGE FARM

Keeps constantly on hand and for sale, specimens of

SHORTHORN, LANCASHIRE,
JERSEY, BERKSHIRE,

AND

ESSEX SWINE. DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,

E. M. SHELTON, Sup't Farm.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying Insects inimical to the Kansas Farmer.

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

Farming for Profit!

Special Courses in

KANSAS PRACTICAL AGRICULTURE.

Simple Tillage,
Farm Implements,
Comparative Physiology;
Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
Manures,
Feeding,
Buildings.

185 Acres used by this Department.

Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Gal-loway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

MECHANICAL DEPARTMENT.

Regular Instruction and Practice in
Carpentry, Cabinet-Making, Turning,
Scroll Sawing, Wagon Making,
Blacksmithing, Painting.

The Department is well equipped with tools and machines for the student's use.

KANSAS STATE Agricultural College.

A Thorough and Direct
EDUCATION
FOR THE
Farm, Orchard, Shop and Store.

Tuition Absolutely Free!

The next Term begins Thursday, August 26, 1875.

Gardening for Profit!

Instruction and Drill in

KANSAS HORTICULTURE.

THE NURSERY, ORCHARD,
VINEYARD, VEGETABLE GARDENING,
FLOWER AND LANDSCAPE
GARDENING.

Kansas Forest Culture a specialty.

Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

Vol. 1.

MANHATTAN, KANSAS, SATURDAY, JULY 3, 1875.

No. 11.

THE INDUSTRIALIST.

Published Every Saturday,

BY THE

PRINTING DEPARTMENT

OF THE

KANSAS STATE AGRICULTURAL COLLEGE,

MANHATTAN, KANSAS.

Terms of Subscription.

SEVENTY-FIVE CENTS per year, postage prepaid. Ten cents per month, postage prepaid. Single copies, delivered at office, two cents each; by mail, three cents. Payment absolutely in advance! Paper stopped at expiration of subscription.

ADVERTISING RATES.

CASH DOWN!

One cent per word for each insertion. Special notices two cents per word for each insertion.

Advertisements of less than ten words to be counted as having ten words.

Displayed advertisements at ten cents per nonpareil line of space occupied. Address, A. A. STEWART, Manhattan, Kansas.

Boiled Down.

The Ohio grape crop is light.

Cherries twenty cents a quart at Fredonia.

Leavenworth county is assessed at \$10,000,000.

La Cygne shipped 8,500 pounds of wool last week.

Baltimore public schools close at 1 p. m. Sensible.

Montgomery county wheat crop is worth \$750,000.

The Paola cheese factory uses 2,540 pounds of milk a day.

Leavenworth reports hoppers as large as canary birds.

Saline county harvests 500,000 bushels of plump, fat wheat.

Forty thousand more Mennonites are coming to America.

Ohio and Indiana have had a retail sample of an earthquake.

Salina pays its city marshal \$1 per month, and fees of arrest.

The Times reports a new crop of hoppers hatching out at Leavenworth.

An editorial excursion from ten eastern states has visited southern Kansas.

Alexander H. Stevens will commence the delivery of an oration at Atlanta July 3d.

Western Massachusetts has an unprecedented drouth and Illinois too much rain.

In the grasshoppered counties corn has been replanted three times. Such grit should win.

In spite of hoppers, Woodson county expects to raise a larger crop of corn than ever before.

Brigham Young talks of emigrating to Mexico. He will die some day and go where it is warmer.

Boss Tweed has been released from prison by the court, and is in jail awaiting trial for stealing \$7,000,000.

The Blade whittles it out that a game of base ball costs \$43.20 in expended muscular energy and busted clothes.

And now the doctors say that the ball did not enter Col. Anthony, and that the abrasion was only a powder burn. Next.

At Topeka, two women sold the hair from their heads to buy seed corn. Send their photographs to the centennial.

The Dispatch reports hoppers in Clay county in 1866-67. Their visitation was similar to the recent one and the crops of 67 good.

Prairie grass near Leavenworth is six inches high where ten days ago the hoppers were two inches deep, according to the Times.

The important discovery has been made by a philologist that Cinderella's slippers were made of fur and not of glass—"varie," not "verre." Sound the hughag!

Special Farming vs. Mixed Husbandry.

An Essay by John S. Griffing, a member of the class in Practical Horticulture of the Kansas State Agricultural College.

In the early history of every country there is adopted a system of agriculture which in its general features is peculiar. A new soil gives a good return for the little labor and capital invested. In a new country, where land is cheap, labor and capital high, the labors of the year are concentrated on "seed time and harvest." The farmer seeks every method which will bring him in ready money; he is always watching for something which will give him the best and quickest returns. From this disposition comes the tendency to "special farming." Farmers here in the west talk about the best crops to raise at present, thinking or caring nothing for the future condition of the farm. By special farming we mean the production of a single staple excluding all others. The great cause which has led to special farming is, that the majority of the people who come west to follow farming as a business are poor. They have little or no money, and to obtain this much needed article, they raise those crops which will bring them in immediate returns. People must and will have a living, and in some places where money is scarce barter is resorted to. In Michigan a few years ago shingles were the current money of the country. A farmer, when he wished to purchase his dry goods or groceries, hauled his load of shingles and exchanged them for the goods. And so in all transactions shingles were used instead of greenbacks. Every farmer needs money to improve his farm and to buy food, clothing and little luxuries which only money can buy, and as a necessity he must raise those crops which will return him the cash in the shortest time. It is a great question whether or not this is the most profitable system which can be devised. In a new country the population is very sparse; there is a great want of capital. People who come west rarely have more than enough money with which to purchase their land. With land thus cheap, labor and capital high, and the produce of the farm of so little value they can not afford high farming. It will not pay for them to invest large capital in the ordinary operations of the farm, to manure with nitrates and superphosphates when corn is at 15 cents a bushel and other products proportionately low. We can see the injurious effects of special farming in the great periodical famines that so often afflict the people of Asia. Of these we have a terrible example in the distress which has overtaken India during the past year. There the chief article of food is rice. The land is well adapted to the cultivation of this staple; everybody raises rice and in some parts but little else. But some years there is drouth; the result is famine and pestilence like that of the year 1874, in which thousands of people died because they had no crop to depend upon but their rice. In Ireland the chief product of the

soil is potatoes. These constitute a great portion of the food of the people. In the year 1849 mother earth refused to do her duty; the clouds did not send down their rain, the result to Ireland was starvation. Our own country has not been exempt from these crises. A few years ago there was a great mania in Michigan and Wisconsin for the raising of hops. In a few years the large pile of useless hop-poles told too plain a story that the farmers had committed a great folly. About the time of the war there was an unusual demand for wool for manufacture of soldier garments, and a corresponding rise in the price of the raw material. Farmers in the east rushed into the raising of Merino sheep, the price of wool went down and hundreds of farmers were ruined. We have an example of the folly of special farming in our own state in the records of the past year. Many farmers staked their all on a crop of corn and through the instrumentality of the grasshoppers and drouth were entirely ruined. Those who had planted wheat and other early crops were saved because these crops were harvested before the grasshoppers and drouth could injure them. We should bear this in mind that a season can rarely be unfavorable for all crops. If a season is too wet for corn it may be just right for oats, or if too dry for oats it may be right for corn. It is certainly an extraordinary year which will not allow any crop to grow.

We find that if a man wants to make farming pay, he must not be changing about from one thing to another. If he does this he is always buying at the highest and selling at the lowest rates. We may have been raising wheat and from over-production the price of wheat becomes low, and cattle being high, we rush into the cattle business, purchasing our cattle at high rates. Then we find that pork is high, we sell our cattle at low rates and rush into the raising of swine, and so on always buying at the highest price and selling at the lowest. And in this case the man who has the variety is the man who makes the money. Indeed the man who has the variety is the one who always makes the money. If a person practices a system of rotation it acts as an insurance policy against nearly all the evils of the farmers calling.

Remedies for special farming in the West:

1. Increase of population: This we can not control directly. The most thorough system of farming is practiced where the population is most dense. As the population increases we get better and constantly improving local markets.

2. Increase of capital: Increase of population and increase of capital go together. In western farming with land and produce of so little value, we cannot afford to invest large capital per acre.

3. Increase of knowledge: The importance of study on the part of the farmer can hardly be over-estimated. To be a thorough farmer he must study, he must use brain as well as muscle. There is a great difference

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JULY 3, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Four prisoners escaped from the Lawrence jail, over-powering the guard. McDaniels, the Muncie train robber, and supposed to be a member of the James gang, was shot by a farmer, recaptured, and died. It wouldn't be a bad idea to turn that farmer loose with his little gun and have a general jail delivery.

Does the venerable President take the room next to the chemical laboratory so that it will be easy to blow up the boys?—Nationalist.

No. On the contrary that room was selected in order that the boys might blow us up, with less bother and greater effect than heretofore.

The prospects for a large attendance next term seem far better than we had anticipated. Several of our old students who did not expect to return, for financial reasons, are securing boarding. As the practical value and thoroughness of the education here given becomes known throughout the State, the attendance will be greater each year.

L. B. Rogers, of Solomon City, writes that his brother and sister will accompany him next term.

The government never made a wiser expenditure than that for the Signal Service stations. There is no reason why the laws of rains and storms should remain unknown, provided sufficient data for extended investigation can be collected. This is now being done over the whole continent. The probabilities are that before long the subject will be mastered, because more facts are being obtained than ever before. And when the time comes that the general features of a season can be foreseen, great advantages will accrue to the farmer.

No little of the financial depression in Kansas for the past year and a half was occasioned, not by our drouth and grasshoppers, but by the tightness of the eastern money market. And if the crops had as signally failed this season as they have prospered, still the State would have been in better condition than many suppose, because of the better condition of the East. The moment men can sell their farms in the older States an immigration will set towards this one, which is probably without precedent. And, with the present splendid crop, the chances are that a year hence Kansas will be on the top of the wave.

WILL IT PAY?

In another column will be found a statement of the advantages furnished by this Institution to those desiring to learn telegraphy. Both in effectiveness and cheapness they are better than can be obtained elsewhere. But now we wish to call the attention of able bodied young men to the fact that while telegraphy is an attractive business to the uninitiated, because of the seeming ease with which it can be acquired and conducted, yet as a rule it is neither a healthful nor profitable vocation. The labor performed by a night operator is harder and more injurious than that required on any farm. And when this stage is passed and a good day office obtained, the wear and tare of a year over a desk will be found greater than that of a year in the field. Positions depend upon the action of those whose duty it is to obtain the greatest amount of service at the least cost; and, because of the relative ease with which skill in this business can be acquired, competition will always be great and wages will always be low. There is a deal of significance in the fact that you rarely meet a man over forty years of age who earns his living as an operator. On the contrary, great majority of operators are under twenty-five. That is the fact: what is the reason? Because a man cannot support a family on the pay. Such is not the case with farmers. In spite of the gearly whine that farming doesn't pay, some how or other farmers manage to raise large families; to give their children a good education, and, at death, to leave them thousands of dollars in property. Telegraph operators never die, they can't afford funeral expenses; and years before death engage in some other business. It is well to look ahead, and to educate yourself for that vocation which will pay best in health, happiness and cash. If you are determined to be an operator, we will qualify you for that misery in the best manner at the least cost; but ten years hence you will believe more in these statements than you do now.

With young women it is different. They can better stand a sedentary life. The wages are better than those of the kitchen, needle or school room, and the labor is easier. Besides, the chances are that, in due time, some appreciative young man will propose to these operators; that they will accept; and that the click of the magnet and the raps of the division superintendent will alike be counted among the things that were.

From all parts, of the State, even the hopped districts, the indications for splendid crops are greatly better than was anticipated. The rain of last Saturday night was general, and is regarded as having secured the corn crop. The wheat crop is larger than any previous one.

Minuteness of Observation and Report.

Horticultural reports often become practically worthless for want of a minute and definite statement of all the facts. No department of agriculture can possibly suffer as much from this cause as fruit culture. This arises from the fact that there are so many varieties which need to be tested—each to a certain extent affected in its own way by the difference of soil and variation of climate. Then modes of culture enter into the problem, and these extending over not simply one season as in the case of ordinary farm crops, but frequently over several years. This whole matter is often overlooked. An orchardist writes us, "I find that often a variety which does well with me fails with my neighbors." The why in this is what we wish to reach, and if reached will make up the material of real horticultural knowledge. For example, it is found that under certain rare conditions the Yellow Bellflower apple yields abundantly while under almost any other condition it fails. It is evident that certain varieties of fruit that can be relied upon in southern Kansas must be left out of our list for the northern part of the State. The same will doubtless be found to be true also with respect to eastern and western Kansas. In order to reach definite conclusions in regard to the real value of varieties many points need to be carefully noticed. Let us name a few of them:

1. The location and nature of soil and subsoil, and whether naturally or artificially underdrained.
2. How planted, embracing the mode of preparing the soil.
3. Time of planting—the year and whether spring or fall.
4. The mode of culture from the time of planting up to the present.
5. Note also the kind of protection afforded.
6. The effects of marked climatic changes and extraordinary conditions, like those of 1874, should all be carefully noted.
7. Frequently there will also be accidental circumstances affecting the growth and fruitfulness of a tree, which should never be overlooked.

In urging upon orchardists this minuteness of observation and report we have in view a vital point. Our progress in the State depends on this. Tree culturists need to be careful observers. We have long accepted the fact that there was work in successful tree culture, it will be well to accept the other fact that watching and thinking must go with the work.—[Prof. Gale.]

In the match between the American and Irish "teams" for the best shooting, that has just come off at Dublin, the Yankees won the victory by a handsome score.

THE INDUSTRIALIST.

SATURDAY, JULY 3, 1875.

The work on the buildings is progressing as rapidly as heretofore. The appearance of the barn is certainly improved by taking off the long ventilator.

The Third of July celebration promises to be a big thing. Col. Phillips, Gov. Green and Major Cox are booked for speeches, and each of them will put the eagle through a distinct series of evolutions well worth witnessing.

State Horticultural Society. Semi-annual meeting at Fort Scott. A complete report of this meeting including all the papers read is being published in the Kansas Farmer. The fruit growers of the state should give the Farmer a liberal support. Now is the time to subscribe for it.

Attention is called to the advertisement of L. R. Elliott, offering loans at seven per cent interest on good security. This holds good for any portion of the State, and will be of great advantage to those desiring to make paying improvements which, heretofore, were impossible because of high rates of interest.

The regular meeting of the Riverside B. B. C. to be held July 3d has been postponed until Monday evening July 5th. All members and all who desire to become such, are earnestly requested to meet promptly at 8 o'clock at the school room on 2d. St. A captain of the 2d nine to be elected and other important business transacted. All who have not should be ready to pay their \$1.00.

JOHN N. SMITH, Vice Pres't.

FRANK C. JACKSON, Sec.

Normal Institute.

Gen. Fraser, State Superintendent, is doing energetic and telling work, the results of which will appear in the greater efficiency of our educational system. The law provides for the holding of a Teachers' Institute in each judicial district of the state, and not only is it being thoroughly executed, but the Institutes themselves are packed with just such good things as every teacher will find both valuable and interesting. A wisely prepared programme ensures a careful presentation of topics by the several speakers, and the least possible time is wasted in windy discussions.

The Institute for this judicial district met in Manhattan last Tuesday morning. Some eighty teachers and superintendents were present. After organizing the following topics were presented and discussed:

Vocal Music, Mrs. Werden.

Instruction in Conversational Geography, Gen. Fraser.

Instrumental Drawing, Prof. Raymond.

Geography for District Schools, Prof. W. C. Hay.

Course of instruction in English for District Schools, Prof. W. C. Spear.

In the evening and at the Methodist church, an interesting lecture was delivered before the Institute by Prof. J. H. Lee on the moral position of teachers.

Wednesday was occupied as follows:

Supervision of District Schools, Gen. Fraser.

Conversational Instruction in Geography, Gen. Fraser.

Course of Arithmetic for District Schools, Prof. J. J. McBride.

State Constitution, Sam. Kimble, Jr.

School Laws, county superintendent A. M. Crary.

Vocal Music, Prof. Platt.

Industrial Drawing, Prof. W. H. Raymond.

Reading, Prof. Platt.

Geography, Prof. Hay.

English Language, Prof. Spear.

The evening was very pleasantly spent in a social held at the Adams House.

Owing to the earliness of our publication this week, on account of the celebration, we cannot give

later proceedings. They will be found in the Nationalist of next week more fully detailed.

The attendance from the other counties is greater than usual, and the character of the work higher than heretofore. Gen. Fraser speaks in strong terms of the carefulness of preparation upon the part of those presenting the several topics.

Our county superintendent, Mr. Billings, has labored wisely and efficiently in perfecting and supervising the arrangements; and, in this instance, such work, which is often thankless, has not only merited but receives the thanks of all present.

Thursday afternoon the members of the Institute will visit the Agricultural College buildings, and in the evening will have the pleasure of hearing a lecture by Gen. Fraser in the Presbyterian Church.

Telegraphy.

So many enquiries are received respecting the instruction given in our Telegraph Department that it is found convenient to answer them in this form:

As in all other departments, the student is required to take those literary studies which are assigned with reference to their value to the individual as an operator. Ordinarily they consist of English, Arithmetic, Book-keeping and Commercial Law. No deviation is made from this rule, because, first, it is found by experience that pupils learn telegraphy more rapidly in this manner than when sitting over an instrument eight hours a day; and, second, the ultimate success of an operator depends upon his general ability more than upon his skill in simply sending and receiving messages.

As every facility is afforded the pupil to advance as rapidly as possible, the time needed for the acquisition of the art wholly depends upon the application of the student. It is a harder study than is generally supposed, and those who expect, in three or four months, to obtain such skill as will secure good wages are liable to disappointment. On the average, a college year of nine months, will be found necessary, and in many cases a longer period.

The expense depends upon the time. We make no charge for instruction or use of instruments, thus saving to the pupil the \$50 or \$100 tuition of ordinary telegraph schools. Boarding can be had at from \$2.75 to \$4 per week, which is lower than in larger cities. Students forming clubs can reduce this sum to \$1.10 or \$1.50 per week. The expense of blanks, account books, &c., will not exceed \$4 per year.

FACILITIES.

Our facilities are equal to those of any establishment in the United States, consisting of a first class line from Manhattan and the depot of the Kansas Pacific railway to College Hill, over four miles in length, on which are twenty-five offices. The primary department is furnished with six mechanical instruments, eight local instruments, and a register. The latter is only used for the purpose of showing defective and correct writing. The superintendent of the department is an operator of several years experience in all branches of the business, who, by his patience, courtesy and enthusiasm, has proven himself to be a successful teacher.

HOW TAUGHT.

The telegraphic alphabet is taught in progressive lessons, consisting of the dot characters, dot and dash, dash and dot characters of the same denomination.

After the student has committed to memory and learned to make all the characters correctly, he is allowed to write with the key until he can do so with ease and without hesitation; when he is assigned to duty with another student, both working at the same instrument, one writing with the key, while the other copies on paper what is written. Having learned to read readily by sound, students are assigned to duty on local short-lines, the instruments being in different rooms, and are required to send messages to each other in regular message form, keeping and filing on the message books at

their desks copies of all the messages sent and received, which copies are taken by the superintendent and the messages received compared with the original message sent; all mistakes are noted, and the student in error is notified of the same. When the student is able to receive at the rate of ten words per minute he is assigned an office on the line—those living or boarding near the line can have instruments in their rooms—and is required to send messages, as above, which are entered in a register, and a correct account of all business done in the office is kept, a weekly report being made to the superintendent on Saturday of each week. These reports are audited by him and each office found in error is notified. Each office, on receipt of an error sheet, must immediately correspond with the office with which he is in error and ask for an explanation. After such errors have been corrected the office receiving the error sheet must immediately make a satisfactory explanation to the superintendent, correcting the error. The books and blanks used for the work above mentioned, are furnished by the College at cost price, and are exact copies of the books and blanks used by the Western Union Telegraph Company.

Associate press report from daily papers is sent two hours each evening. Advanced students are required to take it, and send their copies to the superintendent each morning when these are carefully compared with the original. Students who can receive and make a legible copy of twenty-five words per minute are granted a certificate. Final examinations in all cases to be made by operators not connected with or interested in the College.

A special course of lectures on electricity, the battery, &c., is given by Prof. Kedzie.

We guarantee no situations, and such guarantees are worthless, because of the fact that the men proposing to make them are not managers of the railroad and telegraph lines who employ operators.

MONEY! MONEY! MONEY!

Loaned on long time, and at LOW RATE OF INTEREST, on first class improved real estate. I can give you money now at hard time prices. Interest

AT SEVEN PER CENT!

Payable semi-annually. Commissions light. Don't make a loan till you call on

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Manhattan, Kansas.

Special for Woman.

Physiology and Special Hygiene.

Special Lectures on

FARM ECONOMY,

By Prof. Shelton—the Dairy, Poultry etc.

GARDENING,

By Prof. Gale—vegetable, flower, commercial and ornamental.

HOUSEHOLD CHEMISTRY,

By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation etc.

A similar course, applying truths of science to the Health and Work of Woman, cannot be found elsewhere in the United States.

ENGLISH LANGUAGE.

The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,

HISTORY OF ENGLISH,

STRUCTURE OF ENGLISH,

STUDY OF WORDS,

AND RHETORIC.

Constant practice in the class room, and, if desired, at the printer's cases.

[Continued from first page.]

between a man who can plow, sow, reap and perform the ordinary drudgery of farm-life and the man who has the brain to manage a farm. Farmers too often lose sight of the fact that there are fixed principles in agriculture. Too many farmers neither practice nor know anything like a system in farming. And this every one who intends to follow farming as a business must do if he would succeed. The farming we have here in the west is forced upon us by the exigencies of the case. But with an increase of population we will see an increase in the value of lands and crops; better markets will invite better cultivation, and this will enhance the value of the land. Men with small capital will be prevented from speculation in land, and instead of buying greater breadth of soil men will improve and cultivate their farms more thoroughly. "Praise large estates, cultivate small ones" was an ancient maxim, and if this good maxim could be instilled into the mind of every western farmer, fewer cases of land poverty would be known. There are thousands of men in the United States who are competent to manage a farm, while the number of men who can manage a very large farm, with success, could be counted on a person's fingers. But the increasing population will prevent, in a certain degree, the accumulation of land by single individuals, and we may hope that our western country may outlive the grasshoppers and drouth which have done so much damage during the past year, and yet become the Garden of the World.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

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Papers Pamphlets, and Books neatly bound.

Farming for Profit!

Special Courses in

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Simple Tillage,
Farm Implements,
Comparative Physiology,
Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
Manures,
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Buildings.

185 Acres used by this Department.

Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Gal-
loway Cattle; Berkshire, Essex, Lancashire
and Poland China Swine.

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Four miles of line, twenty instru-
ments, and daily instruction and drill, by an
experienced operator, in sending, receiving
and office accounts, reports and book-keep-
ing. No charge, except for blanks, say \$3.
Special course of lectures, by Prof. Kedzie,
on electricity, battery, etc.

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These lands were carefully chosen in 1863, by Com-
missioners, who examined the immense body of
Kansas lands then unclaimed, selected the most
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section would make a good farm." By reason of the
improvements near these lands, often on adjoining
tracts, they have been much increased in value, and
at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash,
and balance in seven equal annual installments,
with annual interest at ten per cent., or any greater
portion of the whole amount may be paid in cash at
time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

INJURIOUS INSECTS.

Special attention paid to the habits and
best methods of preventing or destroying
Insects inimical to the Kansas Farmer.

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Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem,
bud, leaf, flower and seed. Careful study of
cereal grains, grasses, and other food-plants;
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SHORT-HAND REPORTING.

Daily instruction by a practical teacher.
A new class will be formed August 26, 1875.

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We offer for sale three fine yearling bull calves, as
follows:

One Short-horn bull, red; got by Minister 6363, out
of Grace Young 5th. Price, \$200. Grace Young 5th
sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco
404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price,
\$100.

These prices will place this stock within the
reach of Kansas farmers and stock men.

Address,

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Instruction and Drill in

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THE NURSERY, ORCHARD,
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Seventy acres devoted to experimental
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Regular Instruction and Practice in the
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Past-Graduates.**

The Laboratories are fully furnished with the best
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Dr. Patee.

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The Piano, Organ and Guitar.

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It May Save Your Wife's Life!!

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

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Industry.

An Essay read by E. M. Shinkle, a member of the Carpenter class of the Kansas State Agricultural College.

Industry is the life of nations. Without it no race can long exist. The industry of the American people is what has raised the United States to so high a place of honor among the nations to-day. It has ensured all the great inventions and improvements in the arts. Indolent people are not by any means noted for inventions and discoveries. These have been the result of long study and investigation. They have never been the result of mere theorizing but of theory and experiment combined. Theory alone amounts to but very little and science would have never attained eminence if it had not been for its practical application.

It is wonderful to behold the improvement that has been made in the mechanical arts during the past few years, and all by industry. Every new invention or discovery seems to give new life to industry. From the discovery of steam, the many applications of it which tend to enlighten and civilize the world have been deduced. Among these applications are the great ocean steamer, locomotive, steam press and hundreds of other inventions without which it would now be impossible for the world to advance. At the first suggestion of the locomotive the idea was considered absurd. The scientific men of that day reasoned from theory and said that such an engine would not have the power to move itself, much less to draw a heavy load. But in the mind of George Stevenson, an industrious coal miner in England, such theoretical objections did not have much weight. With a practical skepticism for all unverified hypotheses in the domain of mechanics he preferred practical experiment, and by this simple method he discovered that a locomotive was capable, not only of moving itself but of drawing heavy loads. He then devoted himself to its practical demonstration and thus earned for himself a well deserved reputation as the originator of the modern railroad. Thus from industry we have obtained all the advantages conferred

by the railroad. The same is true of the steamboat. It was John Fitches industrious and energetic mind which enabled him, in 1785, to cross the Schuylkill river in a boat propelled by steam. So it was with Robert Fulton and others who took an active part in this direction. Thus we see that practical skill is the great motor of inventions and discoveries.

On intelligent industry depends the hope of our country and of its inhabitants as individuals. A good illustration of this truth is furnished by the aborigines of this country. They are an idle race, and by reason of their indolence are being exterminated. No person can be idle and prosper, for both body and mind must work. The haste to get rich without patient persevering industry is making our country more and more corrupt. A common mistake among the industrial classes is that some men are to do all the thinking while others do all the working. The former class are called gentlemen, the latter operatives. The working man should be often thinking, the thinking often working in order to develop properly both mind and body. As things are now the members of one class despise, while those of the other envy all who belong to a class different from their own. There was a time when a man with a good literary education was considered sure of success; this rule, however, often failed. That time has passed. A man now-a-days who has a good literary education but no other, is not as sure of success as the one with a good industrial education. We do not mean by this that he should only know how to work but that he should have an education adapted to the wants of the industrial man. It is only by labor that thought can be made healthy. The two cannot be separated with impunity. The educators of our country are beginning to see that this is the truth and are beginning to educate in a manner that will not separate them. England, France and Germany each have a great many industrial schools, and the American people are awakening to the necessity of an industrial education. Congress saw the need of this when, in 1862, it passed the organic act endowing agricultural colleges. As a result of this act we have agricultural colleges all over our country. Besides these there are various industrial and mechanical institutions which are among the best that can be found in any country. The organic act of 1862 does not provide that these colleges are to teach agriculture alone, but that the leading object shall be, without excluding other scientific and literary studies, to teach such branches of learning as are related to agriculture and mechanic arts. The plan by which we believe the Agricultural College of Kansas is carried on, is that while it gives to the student a good literary and scientific education, it also gives him a good industrial education. It does not propose that after receiving here as good an education as his country affords, the student shall go begging a situation in some office for his daily bread. It is advisable that all classes of men know something about the mechanic arts. Even the profes-

sional man needs to understand something of mechanism. The tradesman should understand machinery so that he can deal in the best and thereby obtain the confidence of his customers. No farmer can be successful without at least some knowledge of mechanics. He has to buy and use many kinds of machinery and therefore should know the structure of machines that he may be able to buy those which are made best, work easiest and last the longest. He should also have some knowledge of mechanics that he may be able to use machinery after he has it. He should also know how to do all the mechanical work that is necessary upon the farm.

What is still more necessary for the practical mechanic is, that he should be thoroughly educated. The half-way mechanic never makes much at his trade. The journeyman needs a thorough education that he can at all times obtain the highest wages. This is as true of the mechanic as it is of the professional man. The half-taught mechanic may by his own representation get a start, but as soon as his work is tested he will invariably forfeit his position. When any one hires a job of work done he expects it to be done in the shortest time and best style.

The next question is how can a mechanic obtain a thorough education? A very good knowledge of tools can be obtained by working under instructions of some master mechanic for two or three years, but this is not the only kind of an education the successful mechanic needs. He must have the theory as well as the practice. The professional man besides being perfect in his profession must be acquainted with all the other branches of science and literature related thereto. Besides being skilled in the use of tools the mechanic should have some knowledge of all the sciences related to his vocation. The plan of the Kansas State Agricultural College is to give the student both the theory and practice of his trade. Besides the advantages offered by the Mechanical Department, the student has an opportunity of obtaining as good a scientific education as can be had in the State. The mechanical course is especially adapted to the wants of the mechanic. In the curriculum there is as good a course in mathematics as can be found.

If the interest of the Industrial Department goes on increasing for the next five years as it has for the past year and a half, there will not be an institution of this kind in the United States equal to the Kansas State Agricultural College. And if all the agricultural colleges were carried on in this way the industrial classes would soon begin to rise in the estimation of the people. They would no longer be looked upon as below the professional classes. By this process habits of industry would be instilled into the rising generation, and the standard of American manliness would be raised. By this process the United States, instead of declining as some have prophesied, will go on advancing in prosperity and honor till it reaches the highest point of eminence to which any nation can attain.

THE INDUSTRIALIST.

SATURDAY, JULY 10, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

A Shorthorn Episode.

As illustrating the growing importance of the shorthorn interest as well as the value of a little technical knowledge, an incident transpired in this city during the past week which will be of general interest.

Some six years ago Dr. W. T. Vail of this city attended the sale of shorthorns belonging to the estate of the late Carlos Pierce, of Stanstead, P. Q. At this sale he purchased the shorthorn cow Lady Sale 12th, of Stanstead. Her pedigree is thus recorded in Vol. VII American Herd Book, Lady Sale XII by Monitor 5,019, out of Lady Sale 8th by 2d Prince of Orange 2,183,—Lady Sale 6th by Red Knight 890, &c., &c., fourteen crosses in Stephenson's Princess tribe. Now to the uninitiated there seems nothing very startling in this statement, but I fancy few shorthorn breeders could gaze upon the Lady Sale at the head of this pedigree without violating the tenth commandment.

The truth is the Princess tribe of shorthorns has always been in high estimation among breeders. Mr. Thomas Bates, the famous breeder of the Duchesses, thought them good enough to graft upon his herd. Indeed Belvedere the sire of the Duchess 33, 34, 35, 36, 37, 38, 39, 40, 41, 42 and 43, was of this tribe and purchased of Mr. Stephenson. The great prices which in recent times the Dukes and Duchesses have been bringing has given an impetus to the values of their near relations the Princesses. In fact Princess stock is very good stock to have.

In due course of time the 12th Lady Sale of Stanstead reached Manhattan. While here she produced three heifer calves, and last winter died of consumption together with her calf, in the possession of Mr. Burdett of Waterville. The remaining two heifers, Lady Sale of Manhattan, and 2d Lady Sale of Manhattan, were until recently owned in this vicinity, Mr. W. Rollins having been the owner of Lady Sale of Manhattan, and Mr. Webber of the 2d Lady Sale. Neither of these gentlemen seemed to have the remotest idea that they had a "good thing" in these Lady Sales; and when Mr. Rollins, a few days since, received a note from an innocent old farmer saying that he had a "notion to grade up" his "native herd" and would like to know the price of his shorthorns, Mr. R. promptly offered Lady Sale of Manhattan for \$200. The next train brought Mr. Haggarty, an eastern breeder of some note, who eagerly closed the bargain at the above figures. Haggarty's eagerness in making the purchase alarmed Mr. Rol-

lins, and he determined to purchase the 2d Lady Sale owned by Mr. Webber. But here again Haggarty was ahead. Rollins reached Mr. Webber's place just in time to see Haggarty close the bargain for 2d Lady Sale of Manhattan, with a fine calf by her side, price \$175—the best bargain in shorthorns that will be made in Kansas during this 1875 we will guarantee. Thus Mr. Haggarty returns to Ohio with his high-bred Princess cows, and calf, which cost him the ridiculously small price of \$375. He claims this little adventure to be worth a clear \$2,000, and probably does not over-estimate its importance. The next day after Haggarty had departed for the east, Mr. Brown of the well known firm of shorthorn breeders, Jas. N. Brown & Sons of Berlin, Illinois, took up his temporary abode at the Adams House. It proved to be very temporary. He too was after the Lady Sales that had strayed out into the Kansas prairies.—[Prof. Shelton.

We made a brief visit to Clay Center this week, where Gen. Fraser is holding the Teachers' Institute for that judicial district. The attendance was good and increasing, and, as in the Institute here, the work being done was solid, interesting and effective. Clay Center has more than doubled in size and population since our last visit, which was before the building of the railroad. There is far more business, life and push. And whatever may be the opinions of different persons respecting the advantages and disadvantages of the herd law, this trip has satisfied us that the remarkable development and growth of the county is largely due to the adoption of the herd law. For example, five years ago there were less than one hundred acres of broken land in a four mile drive east from Clay Center. Now, hill tops which we then supposed would only be used for grazing are waving with luxuriant crops, and field after field has taken the place of the raw prairie. There certainly are two if not three acres of broken land to one then; and the whole population is enriched just in the proportion that wheat pays better than wild grass. The difference between the slow development of Davis county the rapid development of Clay and Dickinson can only be accounted for by the herd law, and the contrast is so great that were we a citizen of Davis county, one vote would go for a herd law all the time.

On the thirteenth of June Prof. Wm. K. Kedzie was at Florence, Italy, in good health, fine spirits and as busy as a bee. He had visited the most celebrated of the European laboratories, with the exception of those in Paris, which city he expected to reach the first of this month. Much more attention is given to industrial education in Europe than in America. The means for

teaching the uses made of chemistry and physics by farmers and artisans are far greater and more effective, and the thorough examination which the Professor is making of the methods which, after years of experience, have been adopted by the best establishments of the world, will prove of great value to this institution, and through it to the industrial classes of Kansas. He mentions a physical laboratory at Bologna in which the lecture room was built entirely dark, except one window which threw a flood of light on the lecturer's table. He has visited a great many of the Agricultural "Experiment Stations," and has obtained much valuable information which will be reported to our State Board of Agriculture. As the Professor incurs the whole expense of the tour, it is not often that any institution obtains gratis so much practical information that can be profitably utilized by it. He expects to arrive in Manhattan ten days before the beginning of the next term, August 26th, and will be heartily welcomed home from so long a journey.

Special for Woman.

Physiology and Special Hygiene.

Special Lectures on
FARM ECONOMY,
By Prof. Shelton—the Dairy, Poultry etc.
GARDENING,
By Prof. Gale—vegetable, flower, commercial and ornamental.

HOUSEHOLD CHEMISTRY,
By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation etc.

A similar course, applying truths of science to the Health and Work of Woman, cannot be found elsewhere in the United States.

MONEY! MONEY! MONEY!

Loaned on long time, and at LOW RATE OF INTEREST, on first class improved real estate. I can give you money now at hard time prices. Interest
AT SEVEN PER CENT!
Payable semi-annually. Commissions light. Don't make a loan till you call on

L. R. ELLIOTT,
Manhattan, Kansas.

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It May Save Your Wife's Life!!

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Regular Instruction and Practice in
**Carpentry, Cabinet-Making, Turning,
Scroll Sawing, Wagon Making,
Blacksmithing, Painting.**

The Department is well equipped with tools and machines for the student's use.

THE INDUSTRIALIST.

SATURDAY, JULY 10, 1875.

Senator Harvey was in town the other day.

Hon. H. Clarkson, late Superintendent of Insurance, and now acting for the Atlas company, gave us a pleasant call.

Third of July celebration passed off very pleasantly. As orator of the day Major C. G. Cox, of Junction, made a fine speech and a happy impression.

Sunday evening the several denominations held a union meeting, and a contribution was made of \$7.30 towards the erection of the Kansas building at the Philadelphia Centennial.

The essay published last week on Special Farming versus Mixed Husbandry, was credited to John S. Griffing as a member of the class in Practical Horticulture. Mr. Griffing was a member of the class in Practical Agriculture, and we correct accordingly.

Judge Kingsbury of Burlington, chairman of the executive committee, arrived last Saturday, when the committee held its regular monthly meeting and transacted the usual business. Fifteen per cent less than the estimate of the work done by the contractors on July 1, was ordered paid, \$2,550.

In reply to the enquiries at this office respecting the advertisement of L. R. Elliott to loan money, we would inform correspondents that loans for three or five years will be placed in any county of the State on good real estate, at one third of its value as appraised by the agents of the lenders, and that the cost to the borrower including interest and all commissions will not exceed twelve per cent.

It is all the fault of the Hon. Dudley C. Haskell of Lawrence that we are sleepy this morning. He arrived with a trunk twice as long as himself, filled with more boots and shoes than he can wear out in a life time. They being of assorted sizes, and his foot being of regulation length, it wouldn't go into more than one pair out of fifty of the lot, anyhow. The rest of his wardrobe occupied one corner of a small valise; and either he talked to us, or we to him, about the superiority of those particular makes of boots and shoes until some time towards daylight. It is a luxurious mercy that he didn't have another trunk full! What puzzles us is to know why he wanted to sell them, if they are so good; why he didn't bring sizes that would fit him, and why he didn't have shirts and things in numbers proportionate to the foot gear. And this morning he said that we had kept him up last night. Folks always has some such yarn as that when he is up here, and the rest let on they believe it. It was a very pleasant evening; though, and as Mr. D. C. promises to come next time in daylight, it will be our fault if he doesn't hear more of the barn, shops, stock and superiority of this College over all other colleges than we did of those boots and shoes. Revenge is sweet!

Yes!

Gov. P. P. Elder makes the following enquiry, after saying some good things about the INDUSTRIALIST, for which he will please accept our thanks:

"I am much pleased to note the successful accomplishment of that necessary appendage for which \$7,500 was appropriated by the last Legislature, and more especially am I pleased to learn that the management has seen fit to utilize a very expensive and comparatively worthless barn in connection with the Industrial Department. Perhaps the opposition to the \$25,000 in the last Legislature did some good. Tell us farmers whether you will succeed in providing all the room and facilities indicated in your last number without any deficiencies."

The diagrams published in No. 10 of this paper were drawn from the working plans, and each of the rooms, as there indicated, will be occupied next term. In preparing the plans and specifications the architect, Mr. E. T. Carr, of Leavenworth, aimed to get all the room which the appropriation could be made to furnish, and, therefore, both in remodeling the barn and designing the new shop, he omitted everything consistent securing with the essential re-

quirements of recitation rooms, viz, warmth, light and the deadening of sound. The great point was to obtain room; and every thing not absolutely necessary for meeting these requirements was stricken from the specifications. For example, only two coats of plaster were specified for the barn, because the cost of the third coat would make the new shop just that much smaller.

When the bids were opened the lowest offer for the whole work was \$7,502.50, or \$2.50 more than the appropriation. But this would leave no funds for blackboards, outbuildings, or the cost of preparing and advertising plans. Accordingly, the floor for the first story of the Mechanical building was omitted from the contract; the painting was reduced to one-coat work in both buildings, and the base or wash boards left out of each. These reductions brought the contract to \$7,150 (have not the exact figures at this writing.) And this balance will meet the necessary expenses as above stated.

Hence "all of the room and facilities as indicated in No. 10 will be provided" without any deficiency. At the same time, when the financial condition of the State will permit, an additional appropriation should be made for a finishing coat of plastering on the barn and the second story of the shop, for plastering the first story of shop and laying a floor, and for wash boards and painting. In the wood shops it is exceedingly difficult to keep machinery level, and to put work together, on the ground instead of a floor. But there is a marked difference between exceeding the appropriation by contracting indebtedness for doing such things, and, on the other hand, leaving them undone until the Legislature has made an appropriation therefor. A small appropriation for this purpose will be asked, and we doubt not will be given; but the Regents have not exceeded and will not exceed the appropriation already made.

We would be heartily glad if our friend Gov. Elder, and every other member of the Legislature, would give us the pleasure of showing him just how much has been accomplished with the last appropriation; and are thoroughly satisfied that a personal inspection of the Institution by members would convince them of the necessity for the whole sum asked last winter. Come up, Governor, and see for yourself.

COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

FREE FROM TAX,

until patents are due.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

KANSAS STATE Agricultural College.

A Thorough and Direct
EDUCATION
FOR THE
Farm, Orchard, Shop and Store.

Tuition Absolutely Free!

The next Term begins Thursday, August 26, 1875.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying Insects inimical to the Kansas Farmer.

GEO. W. MARTIN,

Manufacturer of

BLANK BOOKS,

TOPEKA, KANSAS.

Papers Pamphlets, and Books neatly bound.

Farming for Profit!

Special Courses in

KANSAS PRACTICAL AGRICULTURE.

Simple Tillage,
Farm Implements,
Comparative Physiology,
Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
Manures,
Feeding,
Buildings.

185 Acres used by this Department.

Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Galloway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

Dr. Patee.

SHORT-HAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

THE COLLEGE FARM

Keeps constantly on hand and for sale, specimens of

SHORTHORN, LANCASHIRE,
JERSEY, BERKSHIRE,
AND
ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,
E. M. SHELTON, Sup't Farm.

ENGLISH LANGUAGE.

The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,
HISTORY OF ENGLISH,
STRUCTURE OF ENGLISH,
STUDY OF WORDS,
AND RHETORIC.

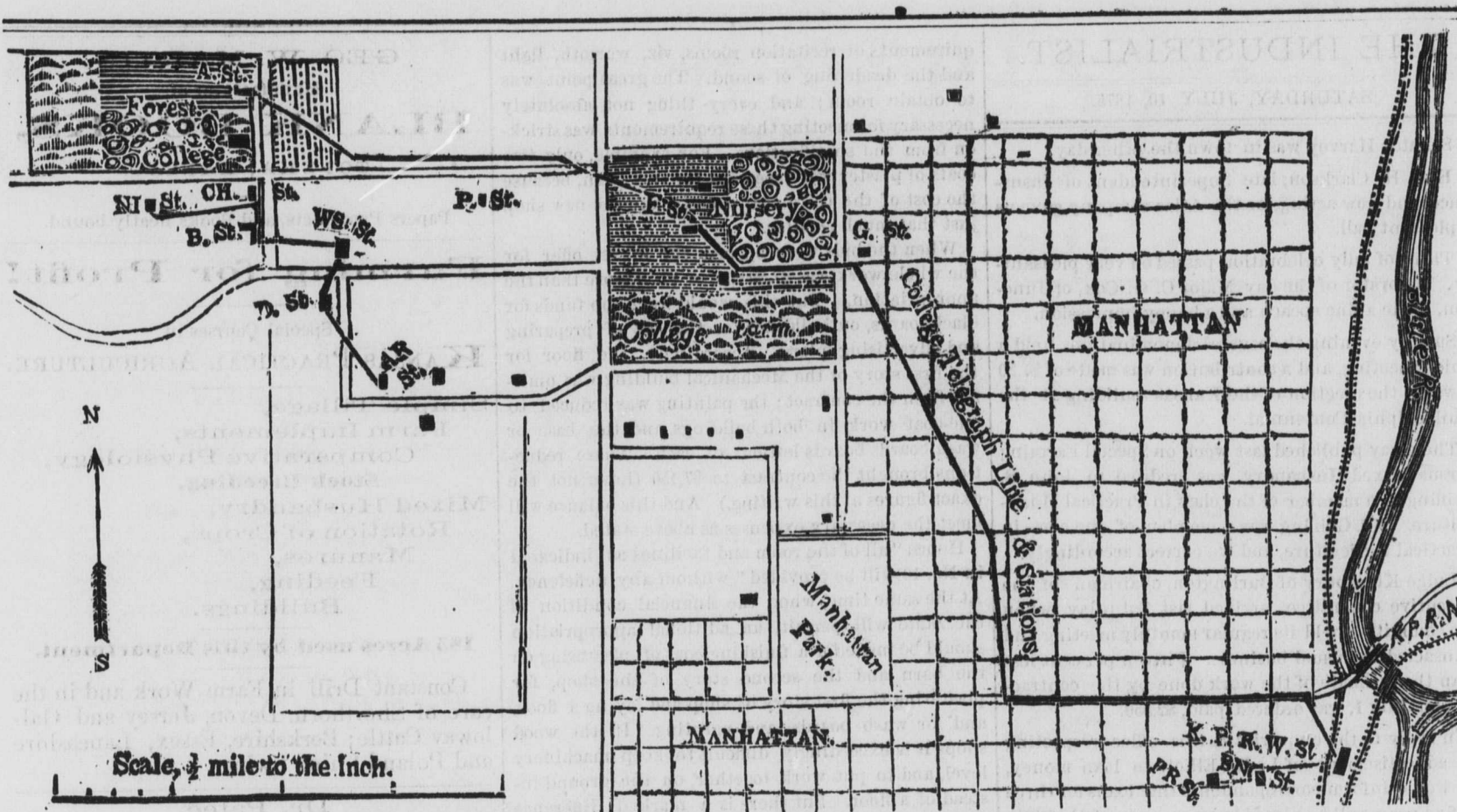
Constant practice in the class room, and, if desired, at the printer's cases.

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.



Map of Manhattan, the College Farms and Telegraph Line.

The Telegraph line starts from "Pr." station (southeast corner of map) and passes through the depot office of the Kansas Pacific Railway, west along the main street of Manhattan, and thence through the "College Farm" to the "Hill." The offices are more or less changed each term to accommodate the members of the classes.

The "College Farm" contains 160 acres, and the "Hill Farm" 100 acres. Heretofore the recitations have been held on the Hill in the building designated "College." The Boarding Hall is at "B" station. Hereafter the greater part of the recitations will be heard on the College Farm. This map having been prepared before the changes were ordered does not show the situation of the Barn or the new Mechanical building. The former is at the point north of "F" station and the latter near the point south of "F." The Literary recitations will mainly be held in the Barn and the Industrial recitations in the Mechanical building. Boarding can be obtained upon the Hill or in Manhattan as desired.

Boiled Down.

The population of Chicago is 438,399.
Leavenworth had watermelons on the 2d.
Wabaunsee county has a population of 4,629.
Thirty feet vein of gypsum in Marshall County.
Atchison has \$220,000 worth of school property.
Colonel Anthony's family do not expect him to recover.
A thirteen inch vein of coal discovered near Lawrence.
The next term of the Agricultural College begins August 26th.
To remove dandruff, go to Arizona and interview the Apaches.
Sedgwick County declines the offer of 6,994 government rations.
Forty-five per cent of the population of the United States are farmers.
The Coffeyville Courier goes to Independence and will be published daily.
Japanese manufacturers will exhibit \$180,000 in goods at the Centennial.
The first Territorial Legislature of Kansas met at Pawnee twenty years ago.
Kansas will export 10,000,000 bushels of wheat this year and receive \$10,000,000.
The Atchison Champion and Junction Union are printed on Kansas made paper.
Junction City is to have a paper mill, and has an eighteen feet vein of potter's clay.
The seventy six national cemeteries contain 308,331 graves of Union Soldiers.
Ten years ago there was not a mile of railroad in Kansas, there are now 2,082 miles.

The Kansas Pacific runs through sleeping cars from St. Louis to Denver.

Lieut. Governor Salter has been re-elected Chief Counselor of the Settler's Organization.

Col. H. D. McCarty, late State Superintendent, takes charge of the Concordia Normal School.

The grasshoppers lifted the crops last year, and this year the crops will lift the mortgages.

In the United States ten persons are engaged in agriculture for every one in professional life.

Seven newspapers in the State have published Prentiss' Agricultural College address, and the rest should.

Counties in Kansas less than five years old will export 500,000 bushels of wheat. Farming doesn't pay—oh no!

Of Fall wheat Chase county reports to the Commonwealth 270,975 bushels; Coffey, 64,800; Cloud, 25,000; Harvey, 27,500; Shawnee, 113,640; Saline, 520,000; Butler 660,000; Montgomery, 720,000; Reno, 18,000.

MATHEMATICS.

Practical, direct and thorough drill in
Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics, Engineering.
Work in Field, with Tape Line, Chain, Compasses, Transit and Level.
The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

TELEGRAPHY

Four miles of line, twenty instruments, and daily instruction and drill, by an experienced operator, in sending, receiving and office accounts, reports and book-keeping. No charge, except for blanks, say \$3. Special course of lectures, by Prof. Kedzie, on electricity, battery, etc.

CHEMISTRY AND PHYSICS

THE most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis. Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry. Photography, Household Chemistry.

Special course in Chemistry for Past-Graduates.

The Laboratories are fully furnished with the best philosophical apparatus and the largest assortment of chemical apparatus and reagents west of the Alleghanies, all of which is for the use of the students.

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Instruction and Drill in
KANSAS HORTICULTURE.
THE NURSERY, ORCHARD, VINEYARD, VEGETABLE GARDENING, FLOWER AND LANDSCAPE GARDENING.

Kansas Forest Culture a specialty.
Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, JULY 17, 1875.

No. 13.

THE INDUSTRIALIST.

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BY THE

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OF THE

KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

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Advertisements of less than ten words to be counted as having ten words.

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A. A. STEWART, Manhattan, Kansas.

Grape Culture.

BY THE HON. B. L. KINGSBURY.

The following communication was read before the Manhattan Horticultural Society at its last monthly meeting, and in view of several points presented specially demanding the attention of the grape growers, the Society requested its publication in the INDUSTRIALIST with a vote that the further discussion of the subject be postponed until the next meeting, August 12th. Though not written for publication we take the liberty of inserting this letter because it is a record of success. We are ready to throw old and new theories and science "falsely so called" to the winds, and confess ourselves only students of the SCIENCE OF SUCCESS. If men make trees and fruit grow, our first, second and third question will be for the HOW.—[Prof. Gale:

PROF. GALE:—Dear Sir:—I have not time before the meeting of your County Horticultural Society to comply with your request to furnish a paper on grape culture, but will submit a few points that will probably provoke discussion and be the means of eliciting information from others. In the first place I want to make this assertion, viz.: That one year ago there were not five bearing Concord grape vines in one hundred (on the average) within two hundred miles of your place south, east or west, that could be expected, with the treatment they received, to be healthy and produce good crops of fruit, and that the only way that they could show a proper respect to the "vitis" family and enter a protest against the neglect and abuse they had received at the hands of ignorant cultivators was to "step down and out," as so many of them did the past season. I realize fully the force and effect of this statement, but I am prepared to stand by it and prove it upon any and all occasions.

I speak from practical knowledge upon

the subject of grape growing. I have not failed to raise a good crop of grapes in thirteen years, part of the time in Kansas. Last year while most of the grapes in this section were burning up and withering with drouth, mine remained plump and ripened up perfectly. This season finds most of the vines in this locality killed to the ground and many of them entirely, while mine are making a luxuriant growth and are loaded with grapes. In regard to my method of culture, pruning, training &c., I have only time to say, without entering into details, that I grow my grapes on the alternate renewal system. Wood that bears fruit this year will be cut out and thrown away next fall or winter. And each year I grow from one to three new canes (owing to the strength of the vine) for fruiting the following year, so that my fruit is always grown on new wood which started from the ground the previous year. I pinch close to the last bunch (which will be the fruit) as soon as the buttons are developed, leaving at the last pinching but three leaves beyond the last bunch. One leaf would be sufficient beyond the last bunch if there is no danger of it being destroyed by accident or insects. I never let a vine overbear. By this system of training I can tell at any time if a vine has more grapes than it can ripen up perfectly without injury to the vitality of the vine, if I think it has I unload the vine even if I have to remove the last bunch. Two thirds of the grape vines in this locality are ruined by overbearing. The same I believe to be true in a great degree all through the State. There is not vitality enough left in a vine after it has been allowed to mature all the grapes it will, (if left to itself,) to carry it through sudden and extreme changes or through a long continued drought or extremely cold winter, and then we curse the climate. There is a great deal of twaddle written about the kinds of soil necessary to grow grapes successfully—how it must be prepared &c. Now the fact is, that with grapes and with all other kinds of fruit, the secret of success is in the care, cultivation, pruning &c., that they receive after they are set out. Get the best soil, situation and preparation of the ground possible under the circumstances, but remember that with all of these, your success depends upon the care and attention bestowed on your fruit crop after they are planted.

There is no special rule that can be given for pruning the grape vine. Each vine is a subject by itself and must be pruned according to its needs and wants regardless of how any other vine in the vineyard has been pruned. The general principles that govern the growth of the vine must be well understood, some system of training the vine adopted, and experience will teach the rest. I have tested nearly all the varieties of grapes that ever had any prominence, and many that had not. The Concord is the most reliable and should constitute two-thirds at least of the number of vines planted. I have good success with "Wilder" and Goetha, either of them as a table grape far surpassing the Concord. Also the Delaware

has done tolerably with me. Half a dozen other varieties I have grown well and produce well, but are not superior to the Concord. Don't fancy you will ever have grape vines looking as nicely as they do in books. Paper is patient, but the vine will be found impatient and not willing to grow just as the books say it will. Let the system of training by horizontal arms alone, unless you have got the patience of Job and wish to learn just how little the people know about training the grape who recommend that system. I have had nearly every work published on grape growing, have visited all the noted fruit farms and vineyards in the West commencing at the noted fruit farm of Knox, of Pittsburg, following up the lake shore vineyards at Cleveland, Ohio, all those about Cincinnati, then through Indiana and Missouri. That visit was made with Dr. Hall, of Illinois, as part of the "ad interim" committee of the State Horticultural Society of Illinois at the expense of the State, for the purpose of learning all we could as to the different varieties of fruit, methods of culture, insect depredations &c., and from my knowledge of grape growing derived from reading, observation and thirteen years successful cultivation of the grape, I am prepared to say that grapes are the surest crop that can be grown in Kansas, not excepting corn.

Boiled Down.

The South will have a good cotton crop.

How to signal a bark—pull a dog's tail.

Baxter Springs is sinking shafts for lead.

The Oregon Indians won't let miners work.

The pay of a French soldier is two cents a day.

Marion Center wants a railroad to Junction City.

The splendid rains this week ensure the corn crop.

The coal trade of Osage City amounts to \$400,000 a year.

The Atchison bridge will be completed by September.

Thirty-four newspapers in Japan; none there ten years ago.

Since 1864 the Swiss Universities have been open to both sexes.

In one day an Abilene firm shipped 1,700 pounds of butter to Denver.

A Cowley man figures the cost of wheat at \$11 per acre in that county.

Judge Huffaker of Council Grove has lived in Kansas thirty years.

And now the exchanges enliven their columns with tax lists by the yard.

A machine for compressing coal dust turns out a ton of solid coal in six minutes.

The Kansas exhibition at the Philadelphia Centennial is to be made by counties.

Kansas grangers advocate the passage and execution of more stringent game laws. Good.

The Great Eastern will run between Liverpool and Philadelphia during the Centennial.

The sale of harvesting machines has been, Abilene 109, Salina 109, Minneapolis 50, and Beloit 200.

George W. Martin wants the following books to complete his Kansas Library: Senate and House Journal of 1861; House Journal of 1862-6-8; also reports of State officers previous to 1868, except for year '63.

In 1496 the grasshoppers devoured the crops of Poland, and in 1742 those of England and Pennsylvania. As they were then infested with parasites, perhaps the prediction that the latter will ultimately destroy the pest is based upon hope rather than fact.

THE INDUSTRIALIST.

SATURDAY, JULY 17, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

August 26th, 1875.—Fall term of the Agricultural College begins.

The Grange.

The Grange is an organization of agriculturists who hold that "individual happiness depends upon general prosperity; that the prosperity of a nation is in proportion to the value of its productions; that the products of the soil are the foundation of all wealth; that the productions of the earth are subject to the influence of invariable natural laws; that the amount produced will be in proportion to the intelligence of the producer, and success will depend upon his knowledge of the action of these laws and the proper application of their principles."

To teach these natural laws, and the best methods of utilizing their action for the profit of the farmer, is precisely the design of the main course of this Institution. Just as the University shapes its instruction for the direct benefit of the professional classes, as Normal schools make a different grouping of the same branches for the direct benefit of the teacher, so do we group and present the several sciences with direct reference to their practical worth to the farmer. If a man wants a medical education he does not go to a law school; for, while both the medical and law schools teach many of the same sciences, yet they present them in such different proportions and direct the instruction to such different points, that the medical student will make a better investment of his time at a medical school, and the law student at a law school. Everybody admits that; but the same everybody does not all realize that the same fact holds equally good for the farmer.

In illustration, take the science of botany. The lawyer or preacher makes no especial use of it, save in rhetorical figures; and the instruction usually given by literary colleges is equally general, comprehending the curious features of vegetable life on all continents. But to the farmer, a knowledge of the laws of plant growth, and the means of applying the forces of nature in raising marketable crops, is precisely the knowledge which is of especial value. It doesn't make a bit of difference to him whether lemons grow better in Yucatan than in California, or what names are given to the stunted flowers of Greenland. And, except for the purpose of so analyzing plants that he can refer to what may be termed the dictionaries or encyclopedias of botany, and thence learn the peculiarities and special worth or worthlessness of a plant with which he has to do, it makes but little difference whether he knows the yard-long Latin or Greek name of a plant or not. Because, it isn't the name of the thing,

but the thing itself, which concerns him. If John Smith is in love with Mary Jones, the name of that young lady is a point so immaterial to John that he devotes his whole energy to having it changed to Mrs. Smith. He wants the young lady, no matter by what name called. And so the farmer wants that knowledge respecting plants and plant growth which will increase his individual prosperity. His livelihood depends upon his skill in handling the machinery called plants, and it is clear that the science of botany has a point and worth for him which it has not for the lawyer. So of other sciences. They are more or less directly used in his work, and, therefore, if taught in the proportion of their direct value to him, will be differently presented than if taught for the benefit of the preacher or school teacher.

The Agricultural College is furnishing exactly this education. Its course for Farmers is framed and shaped on this principal. The apparatus for teaching the natural sciences is better than that of any institution in this or adjoining States. Its appliances in the shape of a fine farm, pure stock and a large nursery for teaching practical farming is equal to that of any institution in the United States. And the full purpose and endeavor of the authorities is to give to the student such knowledge and skill as will best qualify him for all the work and capabilities of the farm. So that it already is doing precisely the educational work which the Granges want done. They ought to know the fact. The officers of the State Grange ought to satisfy themselves that this is the fact. If it be not the fact, then they should show us wherein our methods are defective, and how to make them effective. And when satisfied that the above claim is true, the forty thousand Grangers of Kansas should be informed by those entrusted with the management of their interests, that Kansas has a real Agricultural College; that it is located at Manhattan; that it gives a liberal, practical and direct education for Kansas farming, which cannot be elsewhere obtained; that it does not charge a cent for this education, in any shape. And this information should be given, not because benefiting the College, but because benefiting members of the Grange. We hereby invite every farmer to come and see for himself; and each officer of the State Grange is especially invited to come and see for himself, and to act according to his own convictions after seeing. One thing is certain: that we are furnishing just the education which fits a man for successful farming in Kansas. And one thing is probable: that, since we are thus doing the educational work which the Granges want done, when satisfied of the fact, solid common sense will cause them to give their sons and daughters the benefit of this free education, and to make it a part of their business to develop and render yet more efficient the Kansas State Agricultural College.

Kansas Fruit and Fruit Culture. No. I.

As we travel east from Manhattan we find few bearing orchards; but everywhere young trees just planted. Many of these have been seriously injured the past year. We propose to notice the orchards and gardens of different parts of the State, as they may present some features worthy to be preserved for future reference.

MR. CUTTER'S.

Mr. Wm. Cutter's plantation near Junction City consists of vegetable garden, nursery and orchard. The work of Mr. Cutter here

is specially interesting to the horticulturist because of the knowledge and experience which he brings to bear on his work. Having been from childhood perfectly at home in tree culture, he is able at a glance to take in the whole range of difficulties peculiar to our State. It is our impression that he may feel a little too blue over past disasters; and venture the prediction that within five years there will be no more hopeful man about Junction City than friend Cutter. The past year's experience we are confident is not the criterion of coming years' successes. While thus feeling hopeful we accept the fact that the real losses of the past year are very serious things. Young trees everywhere have an ugly look. Dilapidated and half dead trees are bad enough, but the outlook would be far worse if trees would not grow at all. Now when trees will make such a magnificent growth as they do here there is a "some way" or "somehow" out of our difficulties. As soon as we come within Mr. Cutter's grounds we find in a marked degree the ruinous effects of root-pruning maple trees with the tree digger, in fact maples thus pruned are dead without exception. The old nursery stock is mostly ruined. The exceptions are in favor of standard pear, May cherry and quince. About twenty-five per cent of 1875 root grafts are living. The planting of 1874 is all dead, and that of 1873 is very little better, while those of earlier planting are all seriously injured.

Forest trees in nursery rows of our native sorts are mostly uninjured, best among them all are ash, elm, box elder and red cedar.

Grapes nearly all died, probably not one in thirty alive. The only ones living are concord and Taylor's bullitt.

Raspberries of the black cap varieties look exceedingly well.

Mr. Cutter is giving much attention to vegetable as well as fruit gardening, with every prospect of success. We noticed cabbages, beets, parsnips, peas, vines of various kinds, several varieties of sweet corn, etc., all promising fair returns. But we were more especially interested in the

ORCHARD.

We found some varieties of apples ruined, others growing with variable success. The trees seem to have withstood the devastation of the past year in the following order—the one least injured being the Ben Davis and then in the order named: Fink, a very late keeper, Willow Twig, McAfee, Nonsuch, Duchess of Oldenburgh. Most other varieties are very seriously injured, worst of all Grimes Golden.

Most of the peach trees dead. Standard pears, May cherries and all kinds of plums looking finely. Mr. C's orchard and nursery is on what may be termed second bottom, with a peculiar condition of the subsoil, which he begins to think may be unfavorable to apple culture in dry seasons, while it may be favorable to pears, cherries and plums. The soil is a dark, rich loam, rather thin, say six or eight inches. Then there are about eight inches of fine sand, which the heavy rains of the past few days seem scarcely to have moistened; and beneath this a heavy subsoil of clay and sand which should drain well. Mr. C. believes this thin stratum of sand to have had something to do with the serious injury of his apple trees, as they, being yet young, had not reached with their tender rootlets the more retentive subsoil beneath. He thinks that the high prairie will prove to be our best fruit lands.—[Prof. Gale.]

THE INDUSTRIALIST.

SATURDAY, JULY 17, 1875.

The next term of the Agricultural College will begin Thursday, August 26th, 1875.

The Riverside B. B. C., of Manhattan, plays a match game to-day at Randolph with the "Nameless" club of Waterville.

March 1, 1875, the population of Manhattan Township was 2,077, and of Riley county 7,014—a gain of 277 during a grasshopper year.

We have received a package from the bindery of Geo. W. Martin, Topeka, addressed to J. A. Reece. That gentleman will please call for above and pay express charges.

Judge Humphrey, of Junction, dropped in, and at all times, but especially after his late severe sickness, it is a pleasure to see him with something of the old spring. It does Junction folks good to come to a city and get a little life!

What has the INDUSTRIALIST got against the Kansas Farmer that it should be insinuating that the latter needs special protection from "insects."—Nationalist.

That is good. Go-pher him, Hudson, and stop his chin-ch music!

Mr. W. S. Hanna, lecturer of the Kansas State Grange, gave us the pleasure of a call this week, and our only regret was that his engagements elsewhere compelled so brief a visit to the grounds and Institution. He has promised to return after the session opens; and we hereby give notice that, like Shylock, we shall insist upon the full pound of that promise. If the brotherhood in other counties keep Mr. Hanna up as late at night, start him out as early in the morning, and trot him through the day as vigorously as did the Riley Granges, there will be a funeral.

The carpenters have finished their work on the Barn, and before our next issue the plasterers will probably give it the last stroke. The work of cleaning and removing furniture will at once begin.

The east wall of the Mechanical building is done, and the remaining walls soon will be. The roof timbers are framed and ready for placing as soon as the masonry is completed. The rains and sickness of laborers have interfered somewhat, and the high water has made it difficult to procure sand for plastering; but we have no doubt that Mr. Rains, in spite of the other rains, will have the building ready by the time it is needed.

Major General J. W. Davidson, en route to Fort Lyon on military duty, spent a couple of days with his old friends. The Gen. was for three years detailed by government as Professor of Military Science in this Institution; and, as is always the case with such gentlemen, left a splendid record behind him when again called to the field, where, by the way, he made a mark on the Indians which settled them. He is as springy, genial, wide awake and forceful as if he were just beginning, instead of having completed, thirty years of active military service; and, so far as others can see, has not the most remote idea of ever really growing old, despite the passage of years. So mote it be.

Every semi-occasionally somebody asks what we are going to name the barn, now that it is to be used for recitations. As it was built for a barn, has always been called the barn, and we haven't any barn, but only a stable, it rather seems as if it would be a good thing to call it—the Barn! The Charles Augustuses, whose poetic sensibilities are shocked at the idea of reciting in a building erected for a barn, should by all means seek a field carpeted with educational marigolds, and an atmosphere laden with the perfume of classical violets. This establishment is for the benefit of John and Mary Smith, who raise corn and onions, and who know that a barn is a very good thing to have. We are not proud if we are poor!

Boarding.

Persons in Manhattan or on the Hill who are willing to take boarders next term will confer a favor by notifying Capt. A. Todd of the number they can accommodate; whether they wish gentlemen or ladies, or both; whether they will furnish lodging, or boarding or both; whether boarding is to include lights, fire and care of room; and the price asked.

Parties having houses or rooms to rent to students or clubs will also please notify Capt. Todd of the fact, stating location, number, size, and price.

Students desiring to obtain rooms or boarding will please address Capt. Todd by mail, or apply to him on arrival.

FARM ITEMS.

The Farm Department ships this week to Norman Eastman, Esqr., of Humboldt, Kansas, the yearling Jersey bull "Master Frank," bred by the College; price \$85.

The late rains have done wonders upon the farm. Corn is all that can be asked or desired. Oats which a month ago threatened a total failure are filling nicely, and will make a full half crop. Our crop of timothy was totally ruined by drought and grasshoppers the past spring, within a week it has started up a green even sward over the entire field.

Through the kindness of Mr. Geo. Purinton of Junction City, State agent of the Kirby harvesting machines, one of their beautiful combined machines has been placed upon the College farm for trial. We have just set the machine up, and shall go into the harvest field with it in a couple of days. After we have given it a fair trial we shall have something to say to the readers of the INDUSTRIALIST of the Kirby as a worker. To judge from the appearance of the machine, and the praises our neighbors bestow upon their Kirky's, it is a rare combination of strength and efficiency. Mr. E. B. Purcell is selling the machine in Manhattan.

From Mr. Taylor of Manchester, Iowa, we have just received a set of "Taylor's patent wire stretchers" for a fence of five wires. This is one of those little devices which without much noise or pretense promises to do good service upon the farm, in one of the prominent little matters of every-day life. As Lord Bacon said of another matter, these little inventions "come home to men's business and bosoms, and like the late new half-pence, the prices are small and the silver is good." Without attempting to give the modus operandi of stretching a wire fence with this machine, it will be sufficient to say that an outfit for five wires weighs scarcely a couple of pounds; it is practically indestructible, it can be attached to any part of the wires, and the leverage from a slight expenditure of force is enormous.

FRIEND INDUSTRIALIST:—Can you tell me why the INDUSTRIALIST is like a greenback? Well, it is because it makes no difference in the size of the paper, but all the difference is in the figures. It takes no more rags to make a thousand dollar bill than a one dollar bill, and your paper has more good sense condensed in its little columns than half the more pretentious sheets in the State.

Revisiting the State Agricultural College, my old home some few years ago, I was not surprised, but was delighted at the marked changes for the better it has undergone. I judge from what I saw that its Faculty must be the lineal descendants of Blair's wide-awakes, for every thing about the buildings and grounds showed live men at work—and the present course of study is one calculated to turn out men and women fit to play their parts well and nobly in life's struggle. My best wishes and hopes go with your corps of Professors, and the day will come, working as they do, when their names will not only be inscribed upon the "future perfect water-melon," but live in the hearts of the people of Kansas, whose sons and daughters are under their care. J. W. D.

BOARDING HALL.

I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week.

13-26

A. TODD.

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Special course in Chemistry for Past-Graduates.

The Laboratories are fully furnished with the best philosophical apparatus and the largest assortment of chemical apparatus and reagents west of the Alleghanies, all of which is for the use of the students.

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Complete Course in **Harmony.**

The Piano, Organ and Guitar.

A charge of \$1 per week for the use of instruments.

THE INDUSTRIALIST.

SATURDAY, JULY 17, 1875.

Discoveries of gold and silver ore are reported from nearly all parts of the country. A subsoil plow is, however, as good an implement as any that can be used in getting directly at those metals.

One of the editorial excursionists describes Kansas people as: "Well clothed, neat, clean and tidy, as a rule. No great louts, running about with one suspender, ragged shoes and tangled hair as long as a horse's mane."

A pneumatic tube is to be laid between Newfoundland and Ireland, through which letters and parcels are to be transmitted from one country to the other, under the Atlantic, at a velocity estimated at from one hundred and fifty to two hundred miles per hour.

Prof. Ward, of the State Agricultural College, made us a pleasant call Tuesday. He had been traveling through several counties in a buggy, and reports Dickinson as the banner wheat county. He is a pleasant gentleman, and we shall be pleased to see him again.—*Abilene Chronicle*.

Moore's Rural New Yorker tells how any farmer who grows three or four acres of corn may have three to five hundred bushels of flat or field turnips:

"Get good seed. Sow half a pound per acre in among the corn any time in July, when working the corn for the last time. Be sure and put the seed down broad cast, before you plow or cultivate the corn, so as to work the seed into the ground; no matter if you are marking with a plow, you will not get them in too deep. The seed will come up sure. For the good of your corn and turnips, keep down the weeds."

Birds the Farmer's Friends.

Not long ago, near Rouen, in the valley of Monville, the crows had for a considerable time been proscribed. The cockchafer accordingly multiplied to such an extent that an entire meadow was pointed out to me as completely withered on the surface. The larvæ had pushed so far their subterranean works, that every root of grass had been eaten, and all the turf could be rolled back on itself like a carpet. The multiplication of insects is almost incredible, but our birds seem equal to the emergency. Michilet says; "The swallow is not satisfied with less than 1,000 flies per diem; and a pair of sparrows carry home to their young 4,500 caterpillars weekly; a tom-tit, 300 daily." The magpie hunts after the insects which lie concealed beneath the bark of the tree and live upon its sap. The humming bird and the fly catcher purify the chalice of the flower. The bee eater, in all lands, carries on a fierce hostility with the wasp which ruins our fruit. A large number of insects remain during the winter in the egg or larvæ, waiting for the spring to burst into life; but in this state they are diligently hunted by the mavis, the wren, and the troglodyte. The former turn over the leaves which strew the earth, the latter climb to the loftiest branches of the trees, or clean out the trunk. In wet meadows the crows and storks bore the ground to seize the white worm which for three years before metamorphosing into a cockchafer, gnaws at the roots of our grasses.—*The Animal Kingdom*.

COLLEGE LANDS.

These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

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until patents are due.

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By Prof. Shelton—the Dairy, Poultry etc.
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Regular Instruction and Practice in
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The Department is well equipped with tools and machines for the student's use.

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The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

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One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 843. Price, \$100.

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These prices will place this stock within the reach of Kansas farmers and stock men.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

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The Successful Mechanic.

An Essay by Wm. Ulrich of the Mechanical Department Kansas State Agricultural College.

Success! What is it? This is the question naturally asked by the young man who is just starting out in life. Of course he desires success and will strive to attain it, but before he begins the struggle he should fairly settle in his own mind what he understands by success; for, if he knows exactly what he desires he can concentrate his efforts in that direction, and will be likely to attain his object sooner than if he does not. Let us see what is meant by the term 'successful mechanic.' Those who worship the god Mammon will say it means the rich mechanic; but it can hardly mean that, as a mechanic may have money which he obtained in some other way. Others will say that the successful mechanic is he who most thoroughly understands his business and does his work in the best manner. But this answer will not do, for no one would call a man successful who was so poor that he had to live on charity part of the time, and yet such men may be found in every community, men who are nevertheless first-rate workmen. Hence we see that in the case of the mechanic neither money nor skill, taken alone, constitute or insure success. Yet they are both essential elements of success. Perhaps we should define the successful mechanic as one who understands his business and knows how to make it pay.

Having definitely fixed upon the object to be aimed at, the young mechanic should next consider the ways and means whereby that object may be attained. What then are the means by which the mechanic may attain success? Some of them may be pointed out. The first thing that every mechanic should have is a common school education. This is the foundation on which he may build to any height without fear of its giving way; but it is only a foundation, and the mechanic cannot expect to succeed who has no education but that which he obtained in the public schools. The reason many mechanics fail is that they supposed that their

trade was to be learned chiefly in the shop and therefore that they did not need much education. The mechanic who would succeed needs education as much as the minister, doctor or lawyer, although he does not require the same education that they do. To prove this we have only to refer to the case of those energetic and ingenious persons who have spent their lives in trying to accomplish that impossible thing perpetual motion. If it was mathematically proven to them that perpetual motion was an impossibility they would not believe it, because they had not education enough to comprehend the proof. And so they work on year after year striving to create force, and of course failing. And all for the want of education. If they were well educated they would know that to make a perpetual moving machine is impossible, and would turn their thoughts in some other direction in which they would be more likely to succeed.

After leaving school the young mechanic's education should be both theoretical and practical, and should tend in the direction of his business in life. It may be objected that after leaving school he should take the full college course so as to add to his stock of information, and also to acquire mental discipline; but a man who reads the leading literary and scientific papers of the day will know about as much of the ways of the world as he who goes through college, and as for mental discipline, any mechanic who works out all the problems which his professor gives him to solve, will have enough of it or we are very much mistaken.

The doctor, minister and lawyer, have each to receive a special training to fit them for their professions. In this theory and practice are combined. The mechanic should have some special training. In the dissecting room, and the hospital, the medical student learns to make a practical application of the facts which he acquired in the lecture room. The mechanic should in like manner learn to apply in the workshop the facts which he learned in the recitation room at college, and which are to be used in after life. It is of the greatest importance that he should make the application of the facts at the same time that he learns the facts themselves; for if he does so he will find that when in subsequent life he comes to use the facts, he can do so without any difficulty. Hence, an ordinary college education is not sufficient for the mechanic, for it does not give him that practical training which is so essential to success. Of just what the mechanic's education should consist we will not undertake to say, for opinions may vary somewhat on the subject, but mathematics and physics should form a prominent part. The mechanic deals with matter, and he should understand the laws that govern matter. For example, in building an iron bridge if he does not understand the laws which govern the expansion of metals under the influence of heat, he will probably fail to make proper allowance for the iron. The same case also furnishes an example of the value of mathematics to the

mechanic, for if he does not understand mathematics he cannot calculate the strains on the various parts of the structure, and not knowing the strain on each part he cannot proportion each so as to make one just as strong as another, and thus make the whole structure safe and durable.

Again, the mechanic should be educated in order that he may understand what he reads. In this age of newspapers and books the workman who is so disposed can greatly enlarge his stock of knowledge. But in order to read with profit to himself he must have education enough to understand all the mathematical operations and formulas which he will find in the course of his reading. Thus we see that education in the right direction is an essential help to the mechanic. It has a direct money value in proportion as it aids him in his profession. We would advise the young man who expects to become a mechanic to acquire a good practical education; not what is commonly called an education, that is a little of everything but not much of any thing, but a good solid education; an education which is practical and which will be of some use after it is obtained; an education which he knows will pay him well for the time and money spent in obtaining it. Let him obtain such an one as this and he has laid the foundation of success.

But education is not all that the mechanic needs. He should understand the laws of trade and commerce; for if he expects to succeed he must do something else besides work in the shop all the time. He must be his own business man and financier or he will never make money; for all men who have had any experience in the matter say that they never made any thing as long as they trusted their money matters in the hands of others. And furthermore the mechanic should understand the relations of capital to labor. The misunderstanding of this has cost the mechanics of this country millions of dollars without one cent of gain, a state of things that certainly does not pay. To prove this we have only to refer to the great strikes which have disturbed the country during the last few years, and count the millions which have been spent by the strikers in trying to force their employers to give them higher wages. In return for all this they have received absolutely nothing but the knowledge of the fact that they could not alter the great laws of supply and demand.

Thus we have endeavored to point out a few of the means which must be used by the mechanic who wishes to succeed in life. And now it may not be amiss to take a retrospective view, and compare the condition of the mechanic a generation or so ago with his condition to-day, and note the progress that has been made in elevating him morally, mentally, and socially. In the days of our fathers, schools were not so plenty as they are now. The boy who wished to learn a trade was sent into the shop, often without any education whatever. There he

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, JULY 24, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

August 26th, 1875.—Fall term of the Agricultural College begins.

Kansas Fruit and Fruit Culture. No. 2.

In noting the value of high prairie for fruit culture in this part of Kansas we can not do better than examine the places of Senator J. M. Harvey and Mr. Samuel Cutter. These places lie adjoining each other, about five miles from Fort Riley, and upon the highest land of this region. The soil is a deep black mould. The subsoil is somewhat clayey with an abundance of lime and frequent indications of iron. This soil and subsoil drains naturally to a great depth, while the nature of the subsoil is such as to afford an almost exhaustless reservoir of moisture to growing plants. And at the same time they have no occasion to fear the heaving out of young plants by freezing in the winter.

These gentlemen came to Kansas and settled in their present location in 1859. Their orchards were planted from 1861 to 1865. Mr. Cutter has twelve acres in orchard and Senator Harvey five. Both orchards have been grown with very little pruning. The orchard trees have suffered very little from the grasshoppers. The only real loss from this source is in the crop which might have been reasonably anticipated in 1875.

These gentlemen have planted largely of all the favorite varieties from the east. Many of these have proved valueless here. They have planted largely of cherries and find no profitable returns from any except the early May and the Morello varieties. Plums, excepting our native varieties, have done well.

THE PEAR.

Gov. Harvey planted a few pear trees in 1861. These were probably the first planted in the county of Riley. They have made a vigorous growth. They began to bear fruit the second year from planting, and have produced fruit nearly every year until the present time. And what is especially worthy of note, while every other kind of fruit has failed in this part of Kansas, these trees are producing fruit this year. The blight appeared upon a few of the trees, for the first time, in 1874, but did not affect them seriously. In this case the returns have paid many times for the cost of the trees, and for all the care bestowed upon them. The success is a reasonable one and should encourage the planting of pear trees in small quantities by all orchardists in this part of the State.

We may not be able to reach the cause of this success in pear culture at once, but

there are a few points which should be noted in comparing this with other locations and similar experiments. For while failure in pear culture has been apparently the rule in many portions of the State, and may be even here, it is desirable to get at the causes and discover if possible a remedy.

1. The trees planted were one year from the graft, in good condition.
2. They were planted on a soil which is naturally and very deeply underdrained.
3. The trees have received only moderate culture.
4. The location is not subject to early and late frosts.
5. They have never been pruned.

We do not assume that the results so far attained have been reached through one or all of these causes. They are only noted as the most prominent facts in the case for future reference. How much they have affected results can only be answered by more extended observation and experience.

APPLES.

Apples have done best on this ground are, best summer apple, Early Harvest, next best, Sweet June. Best fall, Maiden Blush and Grammer's Pearmain. The latter is a comparatively new apple. A seedling from Illinois, very productive, and recommended by Mr. Wm. Cutter as one of the best apples for baking and drying known, indeed would prefer it for the latter purpose to any other apple.

Best winter apples, Ben Davis, Little Romanite, Winesap and Willow Twig. Many other varieties have been tested, some of them doing very well, but others have been discarded—but of these we have not time nor room to speak now.

Editorial Correspondence.

PHILLIPSBURG, KAS., July 16th, 1875.

"As iron sharpeneth iron, so doth a man's countenance his friend."

A sight of the last issue of the INDUSTRIALIST, in the office of the Kirwin Chief this morning, called to mind the above proverb, and stimulated me to write this letter. Since I left Manhattan two weeks ago, in company with Rev. E. Gunn, I have driven about three hundred miles. In our route we have passed through the counties of Davis, Dickinson, Marion, Morris, Ottawa, Lincoln, Mitchell, Osborne, Smith, and now this hot afternoon we are stopping in the capitol of Phillips county, a town three years old. Phillipsburg is as far west as Hays, and fifteen miles south of the Nebraska line.

On our route we have every where seen evidences of industry. I have time to introduce the readers of the INDUSTRIALIST to only a few of the industrial enterprises of the many worthy of their attention. To educate young men so that they shall be qualified to develop or to conduct great business enterprises, such as now exist in this State, and others of equal importance in lines of business not yet started, is also a

grand enterprise with which I am proud to be connected.

At different points on the Smoky and Solomon valuable water powers have recently been developed which will doubtless bring their owners plenty of business and wealth. A fine mill on the Smoky, near Junction City, has been erected this summer.

In Marion county I visited two extensive cattle ranches. One managed by two older brothers of Charlie Huston, one of our students, is being rapidly developed. They have discarded all "long horns," which all Kansas stock men should speedily do, and are raising beeves, which are sought after by butchers from distant markets. Whatever improvements the Huston brothers have made are well done. They evidently intend to make stock raising a permanent business, and they are bound to succeed. They have a fine herd a several hundred cattle, grades, besides a small herd of thoroughbred short-horns. They also farm on a large scale, having several hundred acres under cultivation.

Crane's ranch on Durham Park, is another enterprise which must be visited to be appreciated. I will give only a few figures. It consists of eighteen sections of land. Within three years Mr. Alfred Crane, of Chicago, has expended upon it a quarter of a million of dollars. The herd of short-horns, all Herd Book animals, numbers two hundred. Of these twelve have been imported from England. Their herd of common animals numbers 25,000. More than a thousand acres are under cultivation. Some forty or fifty men are constantly employed. The men who manage this magnificent enterprise, Messrs. L. D. Reed and D. W. Crane, are affable gentlemen, and treat their visitors with great politeness. They do not hold their animals at fancy prices. Kansas farmers who wish to improve their stock, would do well to correspond with Maj. D. W. Crane, Durham Park, Marion county, Kansas.

I have visited several large farms, one owned by Jacob Frank, one of the leading Mennonites, containing four sections of land in one body.

I have met a few of our students. Eight miles out of Junction City I found Charles M. Huston as polite and affable in the harvest field as at the College. At Solomon City, L. B. Rogers was doing a man's work in his father's 230 acre wheat field. At Minneapolis Thomas Midgely was also in the harvest field, working a Marsh Harvester, and camping out at night five miles from home so as to get an early start in the morning. At Solomon Rapids I heard of F. W. Hiddleston hauling goods from the railroad up the Solomon valley. Very many are interested in the Agricultural College, and the prospects are that these western counties will be represented there next year.

Crops every-where look finely. The wheat crop is immense, and Dickinson is the banner county. 80,000 acres of prairie are being broken this summer for wheat. Two men in Abilene are each intending to put in 2,000 acres.

The counties which were most aided last winter have enough surplus grain this year to repay all that was given them.

The fear of the grasshoppers is still in the land, because clouds of them are frequently passing over. The report in circulation that Phillips county has been ravaged by the grasshoppers is without foundation. To-morrow we get to Smith Center.—M. L. Ward.

THE INDUSTRIALIST.

SATURDAY, JULY 24, 1875.

The next term of the Agricultural College will begin Thursday, August 26th, 1875.

The corn is growing a mile a day—if you take a big field.

Dow writes for rooms and says that others will come with him.

If you have a house or rooms to rent in or near Manhattan, please notify Capt. Todd at once.

Failyer and Rogers have rented Capt. Todd's house, northwest of the Farm, for the coming term.

There are just exactly 75,482,987 flies to the square inch this week. We counted a dozen and averaged the rest.

The Hon. G. A. Atwood of Ft. Harker, one of the pleasantest gentlemen of the last House, had the good taste to stop off and visit the College. We regret our absence that day.

Col. G. N. Whistler, of the Fifth Artillery, at present detailed as Professor of Military Science in the Kentucky University, has given us the pleasure of a visit. The Agricultural College of Kentucky is a part of the University, and owns the famous Ashland estate. Col. Whistler is spending his vacation at Ft. Riley, where his father, Gen. J. N. Whistler, is in command; and we hope to see him here again at the opening of the next term.

Boarding.

Persons in Manhattan or on the Hill who are willing to take boarders next term will confer a favor by notifying Capt. A. Todd of the number they can accommodate; whether they wish gentlemen or ladies, or both; whether they will furnish lodging, or boarding or both; whether boarding is to include lights, fire and care of room; and the price asked.

Parties having houses or rooms to rent to students or clubs will also please notify Capt. Todd of the fact, stating location, number, size, and price.

Students desiring to obtain rooms or boarding will please address Capt. Todd by mail, or apply to him on arrival.

GREAT BEND, KAN., July 18, 1875.

MR. EDITOR:—I have been in receipt of your spicy little sheet ever since its entrance upon the active duties of life, and consider it worthy the patronage of the people of Kansas. It starts out on the true principle of success, and may be the nucleus of a practical agricultural paper which we cannot afford to be without. I have preserved all the numbers thus far, and consider some of the hints on timber culture of great value. Send it along and I will try to introduce and increase its circulation, until it becomes a weekly visitor in every farmer's house in our noble State of Kansas.

Good crops; fine growing weather; excellent corn; lively trade, and fine prospects for future prosperity.

F. SHELLEN.

Answers to Correspondents.

M. J. F. Lockhaven, Penn., asks the following questions concerning the cultivation of Alfalfa:

1, Where can seed be obtained? 2, When should it be sown? 3, Kind of soil best adapted to its growth? 4, Is it perennial? 5, Amount of seed per acre. 6, Does it make good hay?

1, You can obtain Alfalfa seed, usually, of any reliable seedsman. Ours was obtained of R. J. Trumball, 427 Sanson St., San Francisco, Cal. It cost us thirty cents per pound laid down at this place. 2, It should be sown at about the same time in the spring that oats and barley are sown. 3, A mellow loam with permeable or even gravelly subsoil is best adapted for Alfalfa. The land should be well prepared, and free from weeds and grass seed. Alfalfa may be seeded with oats or barley, very thickly seeded. 4, It is. 5, twenty pounds. Alfalfa hay is not as good as the ordinary red clover or timothy hay, but where it fails in quality it more than compensates the enormous yield that it makes.

That Barn.

We do not want to put on airs or unduly exult over less fortunate people. But it is wholly consistent with that super-abounding humility which is the crown and glory of this outfit, to wonder what other Colleges do that haven't a Barn to convert into recitation rooms! They needn't scowl because of our good fortune; let them rather take heart and hope that an equally mysterious dispensation of afflictive providence may some day burst into an equally glorious mercy, in their own cases.

What that barn was for, was one of those puzzles that used to rip resistlessly through Regential dreams, as a breaking plow through sod—ruthlessly tearing the roots of slumber. With bloodshot eyes and haggard countenances Regents used to meet each other at the morning sessions of the Board and wildly inquire: What is to be done with that barn? And sometimes there were vigorous replies which suggested thoughts of brimstone. That nightmare will never more go crushing and kicking through their official breasts, and, henceforth, we entertain strong expectations of being permitted to go to bed at a reasonable hour when that honorable body is in session.

The deed is "did." The barn is finished. The plasterers have vamoosed. The carpenters have driven the last nail and wiggled the last screw into place. Brooms and scrubbing brushes reign and rain triumphant. The rooms are larger than the old ones, the ceilings are higher, the walls are fresher, the stairs are easier and fewer. The whole arrangement is better. The only trouble may be that some rooms will have too much light; all will have enough. While the Barn isn't a beauty, and will never be, yet it is far better than it seemed possible that \$1,900 could make it. We hope the students who have spent years in the old building will guard against pride as they enter the Barn. Pride goeth before a fall, and falls hurt. Don't let your feelings run away with you! Keep cool! The twenty-sixth of August is not the fourth of July!

Centennial.

Every farmer who can, should compete for the following premiums. Obtaining the premium is the last part of the good to be accomplished. Kansas has been most fearfully advertised throughout the length and breadth of the land as an agricultural pest house. Nothing can correct the exaggerations of the past, bad enough in itself, but a display of present products; and every man who will place samples of Kansas cereals and grasses on exhibition at Philadelphia is a benefactor to his state, and so to himself. It is to the interest of the railroads to make the best display possible; and, therefore, persons forwarding samples have a sure guarantee that these will be exhibited in the best manner. But little time now remains.

With a view to making a display at the International Exhibition at Philadelphia, commencing May 10th, 1876, of products from the country adjacent to the line of the Kansas Pacific Railway in Kansas and Colorado, the following premiums are offered by this company.

For the best collection of cereals and grasses in the stalk, to include as far as practicable wheat, rye, barley, oats, millet, hungarian, timothy, clover, alfalfa, hemp and flax, \$50; second best, \$25.

Express and freight charges incurred in sending samples will be paid by this company.

Samples must be forwarded on or before August 1st, 1875, at which time entry books will be closed. No entry fee will be charged.

An awarding committee, consisting of five persons, will be selected with great care. The examination and award will be made at this office on the 5th day of August, 1875.

The name of each exhibitor, that of the grower or donor, and locality grown, will be carefully preserved and proper credit given to each sample.

CONDITIONS.

1. Each entry must include not less than six varieties of the rains and grasses named.
2. Samples intended for exhibition should be pulled, and the roots retained on the stalk, as far as practicable, although they will be received if cut.
3. Each lot of the respective varieties to be entered must weigh not less than the following: Samples of wheat, rye, barley, oats and millet, ten pounds each; timothy, alfalfa and hemp, seven pounds; clo-

ver and other grasses and flax, three pounds each.

A further premium of \$10 is offered for the best bushel of wheat, rye, barley or oats. As the productions of the rich valley and prairies along the line of this road have generally secured the prize wherever exhibited, it is to be hoped that on this very important occasion every one interested in the prosperity and rapid settlement of the country, will assist us as much as possible. For further information address

JOHN P. DEVEREUX,

Land Com. K. P. R., Lawrence, Kan.

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13-26

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[Continued from first page.]

had to serve a seven year's apprenticeship, and during this time he was almost the slave of his master the latter having full power to treat him as he pleased. As a rule the apprentice was considered a fit subject to be kicked about at his master's pleasure. No one ever thought of supplying him with books or aiding him in any effort at self improvement. He was considered as belonging to one of the lowest classes in society, and if he was brave enough to attempt to overcome the obstacles in his way and mount to something higher and better, he was hooted at and ridiculed by his companions. Meanwhile, those above him in social scale looked down upon his efforts with a sneer, and said an apprentice ought to know better than to try to push himself among his superiors where he had no business. This was the condition of the mechanic's apprentice a century or so ago, and these were the difficulties which such men as George Stevenson had to overcome before they were recognized by the world. Is it surprising that in the face of such difficulties so few should win success, and that the great mass of mechanics should work on all their lives with no ambition, never hoping or striving for any thing better?

Such is a picture of the condition of the mechanic of the first half of the 18th century. It is not an attractive one. It is not a picture suited to impress the beholder with an idea of the nobility of labor. It is one from which he turns away with a feeling of pity for the class among whom ignorance reigns supreme, mingled with a feeling of scorn for those who had the means and opportunities of helping their fellow creatures but were too proud and selfish to do so. But it is with pleasure that he turns away from this picture and looks on another, the condition of the mechanic in this latter half of the 19th century. Now he sees schools and colleges scattered thickly over the land, where the young man may obtain an education ere he commences his life work; and in all large cities there are night schools where the workman, who has not had the opportunity in his youth, can obtain that knowledge which is the foundation of success.

Books and papers of all kinds are plenty in this age of printing, so that the mechanic may keep posted in all that relates to his profession, and may learn many things which if it were not for these books and papers would he never know. The social position of the mechanic is much improved. He is not as in former times placed among the lower classes of society. His position in society now depends entirely upon himself. The mere fact of his being a mechanic does not debar him from any social position which he is fitted by nature to occupy.

But although much has been done in the last century the end is not yet. The mechanic has much to learn and many things to correct, before he will have removed all the obstacles that are in the road to success. When this shall have been accomplished the days of ignorance, of strikes and lock-outs will have passed away. Knowledge will be the common property of all. Capital and labor will not be arrayed against each other, but will go hand in hand helping one another. Then the mechanic having overcome every obstacle and conquered every difficulty, will stand on the top of the pinnacle of success and listen to the plaudits of the world with the consciousness that he who deserves it will surely obtain his reward.

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These lands were carefully chosen in 1863, by Commissioners, who examined the immense body of Kansas lands then unclaimed, selected the most desirable tracts, and reported that "Each quarter section would make a good farm." By reason of the improvements near these lands, often on adjoining tracts, they have been much increased in value, and at the prices and terms offered, are very desirable.

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One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

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Decorative Art.

[An Essay by Miss Ella Child, a member of the Drawing Class of the Kansas State Agricultural College.]

Man is capable of reproducing all that he sees and admires in nature. The means by which he is enabled to accomplish this is art. Art is defined as the free reproduction of beauty. In the erection of an architectural structure the first thought of the workman is for the foundation. This is carefully built and is composed of the best materials. After the foundation is completed the architect begins work upon the building. This may be divided into as many apartments as desired but it all rests upon one foundation.

In the consideration of Decorative Art the foundation is of primary importance. This foundation is drawing. Having this the work will excel according to the motives of the designer. It has been said that no work of art ever has been or ever will be produced but for its own sake. If the conception of the work does not please the designer its execution will not please the world. Let us examine the means by which a person is enabled to properly lay this foundation and construct this work.

How did the mighty masters of art become what they were? How did Mozart become what he was? It was by carefully and thoroughly learning the first principles of music and then applying them with patience and perseverance. In the same way the masters of Decorative Art conquered the first principles of drawing. They learned to hold the pencil and draw a straight line without rule or measurement. In the same manner curves were next formed; then the two varieties of lines were combined to form the desired object. And by practice and patience they at length reached the pinnacle of fame. The way to excellence is the same now as formerly. A perfect control over the muscles of the hand is of the first importance. Without this, clearness of outline and delicacy of expression cannot be obtained. Correctness of eye

in determining measurements is equally important. Thorough practice in making straight and curved lines will then perfect the foundation.

The materials from which this structure is built are gathered from that great artist—nature. Her landscapes are presented to us in such a manner as to fascinate us and to awaken within us all that is noble. In her works there are no broken chords but all is one continuous melody. Her outlines are graceful curves. Her mountains and valleys, her forests and meadows blend together in one unbroken whole.

The designer must necessarily copy from nature, and if the principles upon which he works are correct his copies will always attract attention. It makes no difference whether his designs are for the calico-printer or for the architect, it is their naturalness that causes them to be admired. Designing is a difficult work and requires much skill in the handling of material. In speaking of the capabilities necessary for the success of the designer Ruskin says: "If you wish to know if you have any real power of composition or adaptation in ornament, try to conventionalize a butcher's or a grocer's shop with Saturday night's customers buying cabbage and beef; that will tell whether or not you can design."

Painting is a department in Decorative Art which is in itself an art. And the painter must refer to nature. Her paintings are like fairy pencilings. The delicate tints are grandly contrasted and the gorgeous colors are combined in perfect harmony. The aim of the painter should be to make the reproduction so complete that persons familiar with the original can see in the painting new beauty, while to the unfamiliar it will appear like reality. To accomplish this the picture must be so perfect that the addition or destruction of any part will injure the effect. The various parts must be as necessary to the completion of the effect as the arrangement of notes in music. "Take any grand musical air and upon examination we find that not one of the slightest notes can be omitted without marring the effect of the whole passage in which it occurs." The same degree of relation must exist between all the lines in a picture; every line must be essential to the effect.

"Indeed the picture may be considered as one prolonged musical production; its parts as separate airs, and its colorings as distinct passages in its composition. Among the great painters we have Raphaël, Micheal Angelo and Turner. Each had his own peculiarities of combination but each was great in his own way. Raphaël has immortalized his name in the painting of a suit of rooms in the Vatican. Some of Micheal Angelos' best works are seen on the ceiling of the private hotel of the Pope; while the grandest of Turner's works may be considered as the "Slave Ship."

In architecture the artist cannot adhere so closely to nature, but he can pattern after her in his models. One of the grandest works of architectural decoration is the

Cathedral of Milan. On it has been expended the work and skill of successive masters of architecture. The design of the Duomo is said to have been taken from "Monte Rose," one of the loftiest peaks of the Alps. Another instance in which the designs were taken from natural objects is Trajan's Column. Here the pure white marble, reaching heavenward and seeming to almost pierce the clouds, is decorated with a series of bas-reliefs ascending spirally around the column making twenty-four circles before reaching the top. On this is represented the chief incidents in the Dacian victories of Trajan, together with the triumphal processions with which they were celebrated. The bas-reliefs represent the dwellings of the barbarians, their arms and engines of war; while the warriors and horses, their sieges and assaults are plainly discerned.

Works of art have a refining influence upon human nature. A person who has lived where deference has been paid to artistical works is better prepared for life's struggles than one who has not enjoyed such privileges. The hardly susceptible influences with which the former has been surrounded will lead his thoughts up higher and cause them to rest upon something purer. They will cause him to study nature and to find in her books and sermons.

The effect of true art upon a nation is elevating and refining. This is seen in the history of France. Since the barbarous and meaningless designs of the seventeenth century were replaced by natural designs the moral and intellectual character of that country has been greatly improved. France now has art schools of the highest character, and through their influence she is steadily rising in moral and intellectual capacities. Art schools should be among the first institutions established in a new nation. They are the places in which the noble qualities of man are cultivated. But to insure their success they must have as their aim the representation of nature.

Would that our nation could realize the value of this great agency of improvement. Would that she could establish schools wherein the nobler instincts of her sons and daughters might be educated. The foundation for this work is being laid by Walter Smith, and by proper attention institutions may soon arise in our country which will not only rival the schools of the old world but which will give to America a tone of character securing for her the respect and admiration of every country. Then let the people of this nation work together and assist their students of Decorative Art. Let them provide for such students institutions which by cultivating their finer feelings will better prepare them both for the present life and the life beyond.

Great Britain is the first foreign country to break ground for a building for centennial purposes at Philadelphia. The commissioners of that country began work July 21st.

THE INDUSTRIALIST.

SATURDAY, JULY 31, 1875.

J. A. ANDERSON, Managing Editor. J. H. FOLKS, Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

August 26th, 1875.—Fall term of the Agricultural College begins.

Kansas Fruit and Fruit Culture. No. 3. OUR OBJECT.

It is our wish to reach the simple facts in regard to fruit culture in Kansas. We are even more anxious for these facts than to make a good showing for Kansas. We are not in the advertising business, and do not propose to put the "best foot forward" in the sense of ignoring any facts. We shall not seek to advertise one locality nor another, nor yet the whole of Kansas, but to gather up the results of past experience in fruit culture and put it in such form that conclusions can be adduced and made available for future work.

Every one who has given the least attention to the subject knows that there are very marked differences in the value of certain varieties of fruit for fruit culture in Kansas. Many varieties valuable in the East must be discarded here. There are also marked differences in soil. There is something also in peculiarities of location. There are also marked variations in climate even in Kansas. These peculiarities are none of them well understood; and yet we have had experience enough already to throw some light on all these points if that experience can be gathered up and made available. Thus much it seems necessary to say directly to those who may be interested in fruit culture, with the view of securing their hearty co-operation. We believe it possible to make the combined experience of all fruit-growers available for the general good, and hence we solicit reports of facts and actual experience from all parts of the State, so that we may secure in the end a comprehensive view of what has been accomplished in fruit culture.

The nursery and orchard of John Davis, Esq., is located on high ground about three miles from Junction City. The soil is a calcarious clay, with traces of iron, very similar to that mentioned in the last number only somewhat thinner and with a greater inclination of surface; hence the growth will be ordinarily slower and perhaps better prepared to withstand climatic changes. The ground is high, with inclination in all directions except to the east. This plantation consists of about ten acres. The first trees were planted in 1871. While this case will not throw any light upon the fruiting qualities of different varieties it will give us a view of what the unfortunate and exceptional trials—grasshoppers, drought,

fall rains and extreme cold of the winter—of 1874 did for trees on high and dry ground. There is on these grounds an occasional buffalo wallow where trees will not grow. In these cases probably thorough manuring and deep culture will be the only remedy. There are here from sixty to eighty thousand trees in nursery, all two or more years old. The three-year-old trees here are not larger than those two years old grown on lower land; and this will probably account, in part at least, for their comparative immunity from injury last year; for while on lower grounds peach trees were seriously injured, of twelve thousand seedling peach trees here scarcely one hundred were ruined. Of the apple trees about forty per cent. were unfitted for last spring's sales; many of these will recover, so that not more than ten or fifteen per cent. will be a final loss. The northern slope suffered more than other parts of the plantation, though perhaps caused in this case from buffalo wallows and from working the ground up and down the hill. Of budded peach trees forty to fifty per cent. are lost.

Pear trees have received little attention. Those on the ground are mostly dwarfs. Loss of those twenty-five per cent. The standards from special causes have been neglected but have suffered less than the dwarfs.

The injury to the apple trees is comparatively slight. Those which have suffered least are the following: Benoni, Red June, Sweet June, Early Harvest, Douchess of Oldenburgh, Maiden Blush, Red Astrachan, Fameuse, Porter, Rambo, Autumn Swaar, Yellow Ingestrie, and the Crabs, Winter Sweet, Ben Davis, Stark, Milam, Rawl's Genet, Sweet Romanite, Rock Pippin, Park's Keeper, Lawver, Press Ewing, Newtown Pippin, Winesap, Willowtwig, Fink, Hew's Virginia Crab and Wagener. Among those which have suffered most severely may be named Keswick Codlin, Nickajack, Stanard, Rome Beauty, Grimes' Golden and Carthouse.

Of grapes fifty per cent. are dead. Those two years old in the nursery have suffered more than the vineyard. The evergreens are dead except Austrian Pine and Red Cedar.

Forest trees, maples and poplars on northern slope, badly damaged. Mulberry slightly injured. European Mountain Ash fifty per cent. dead. European Larch all dead. Butternut, Juglan's Cinerea, badly damaged. Box Elder, Elm, Black Walnut and Ash are all right.

Query: How much has soil and location to do with Mr. Davis' comparative immunity from injury?—[Prof. Gale.]

The failure of Duncan, Sherman & Co., of New York, for \$6,000,000, has not affected the general market, as was at first feared.

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One Devon bull, imported from Canada. Price, \$100.

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GARDENING.

Kansas Forest Culture a specialty.

Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

THE INDUSTRIALIST.

SATURDAY, JULY 31, 1875.

The Executive committee will meet next Thursday.

The next term of the Agricultural College will begin Thursday, August 26th, 1875.

The attention of students wishing to rent rooms or houses is called to the advertisement of L. R. Elliott.

The Westerns of Topeka and the Riversides of Manhattan play the return game of base-ball in Manhattan this afternoon.

A gentleman just from Leavenworth affirms that the corn on the College Farm is taller than any between this city and that village. Correct.

Prof. Ward has returned from his excursion through the western counties, and has gone to Ottawa. He expects to be on hand next week.

This week the College shipped to Burlington, for S. J. Carter, of the State Board of Agriculture, a trio of Berkshire pigs. A very few nice ones are left.

The Riley County Agricultural Society will hold a fair at Manhattan during four days, beginning Sept. 28. The attractive premium list and good crops will doubtless ensure a fine exhibition. J. Q. A. Sheldon, Secretary, will give desired information.

So far as our observation extends no town in Kansas has suffered less from the general depression of the past two years than Manhattan. Instead of decreasing in size it has more than held its own. Trade has been good, fine residences have been erected, and stores enlarged.

In answer to the questions of M. J. F. last week the last sentence of answer third should read, "Alfalfa may be seeded with oats or barley, very thinly seeded." The last clause of the fifth answer should read, "But where it fails in quality it more than compensates in the enormous yield that it makes."

The Adams House has the most attractive dining room in Kansas. The tall windows are elegantly shaded by beautiful vines, groups of blooming plants occupy the corners, and graceful cages of singing birds decorate the walls. As a matter of course, the same taste which places these things in a hotel places everything else there which a traveler can ask.

Our young friend W. P. Burnham, who attended the College last year, is now at Fort Stanton, New Mexico, where his parents reside. Will is assisting his father who is Quartermaster at that post. He writes that he has a "horse, two dogs, three guns, a revolver and a game rooster" with which to amuse himself during his leisure hours. He also says he will not be able to resume his studies the coming term.

A. A. Stewart has returned and Mr. Jeff. Davis, after a most satisfactory discharge of duty, has gone back to the Nationalist office. If there is any other man, in any State, who is more accommodating than Mr. Albert Griffin we would like to hear of him. He is equally good natured in lending compositors, matter, spaces and items, and we are growing hopeful that an application for money to pay our bills might not be refused. Everybody who wants to know what takes place in Riley county in particular, and in the rest of the world in general, can't do better than to subscribe at once for the big, bright-faced, newsy Nationalist.

The walls of the mechanical building are up, the roof timbers in place, and the shingles are snuggling into position with great rapidity and zest. Probably the close of next week will find the roof completed, and the work of flooring and partitioning in progress.

The recitation rooms in the Barn are having their faces washed and hair brushed and will be ready to receive company August 26. The seats from the old chemical lecture room have been moved to the new

one; and, so soon as the blackboards of the several rooms are finished, the old chairs will find new quarters. The geological cabinet and the library will remain on the Hill for the present, and some classes will make recitations there, as convenience may determine.

We understand that for the convenience of all concerned, an examination of candidates for State diplomas and State certificates will be held this year on Tuesday and Wednesday, August 10th and 11th, at five different places, viz: Manhattan, Emporia, Topeka, Lawrence and Leavenworth. At each of the above named places the examination will be conducted by a member of the State Board of Education. The examination will be conducted at Manhattan by President John A. Anderson; at Emporia by President C. E. Pomeroy; at Topeka by the State Superintendent of Public Instruction; at Lawrence by Dr. James Marvin, Chancellor State University; and at Leavenworth by Prof. John Wherrell, President State Normal School, Leavenworth. The examination will begin at each place at eight A. M., Tuesday, August 10, and close at six P. M., August 11.—Commonwealth.

Arrangements for the examination at Manhattan will be announced next week.

General Sam. Long, with his usual vim, has completed the grading for a sidewalk from the corner of Juliet avenue and Fifth street to the eastern wall of the College Farm. Somehow or other, we don't yet see the "how" or the "other," the College will have to finish the line through its grounds to the Barn. Only those who have heretofore tramped to the Hill through all weather can fully realize the very great convenience of this improvement. Hereafter, students boarding in town can reach the College as easily as the University or Normal Schools are reached from their towns. In behalf of all interested in the College we very heartily thank the citizens and authorities of Manhattan for this walk, and hazzard the belief that if the town or lot owners will do the planting the INDUSTRIALIST will guarantee that all the forest trees needed for ensuring shade along the whole line will be furnished.

Boarding.

Persons in Manhattan or on the Hill who are willing to take boarders next term will confer a favor by notifying Capt. A. Todd of the number they can accommodate; whether they wish gentlemen or ladies, or both; whether they will furnish lodging or boarding or both; whether boarding is to include lights, fire and care of room; and the price asked.

Parties having houses or rooms to rent to students or clubs will also please notify Capt. Todd of the fact, stating location, number, size, and price.

Students desiring to obtain rooms or boarding will please address Capt. Todd by mail, or apply to him on arrival.

TO COLLEGE STUDENTS.—For the accommodation of students who wish to attend the Agricultural College I have rooms to rent, in convenient locations, at reasonable figures. Address, L. R. Elliott, Manhattan, Kansas. 15-19

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13-26

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PRINTING DEPARTMENT

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Arithmetic,
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Algebra,
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Trigonometry,
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Work in Field, with Tape Line,
Chain, Compasses, Transit and Level.

The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

COLLEGE LANDS.

The lands of the Kansas State Agricultural College are located in Riley, Clay, Dickinson, Marshall and Washington counties, and comprise some of the choicest tracts in those counties. As these, with one exception, are herd law counties the value of the land for farming purposes is much enhanced; and the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest lands in the market. Prices from \$5.50 to \$10.00 per acre.

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Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

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Special attention paid to the habits and best methods of preventing or destroying Insects inimical to the Kansas Farmer.

THE INDUSTRIALIST.

SATURDAY, JULY 31, 1875.

Farming and Stock Matters in Dickinson and Marion Counties.

BY PROF. E. M. SHELTON.

For some years past I have noticed that at nearly all of the prominent eastern short-horn sales, Kansas has been represented and has succeeded in bearing off many of the choicest animals that have come under the auctioneer's hammer. I have noticed further that with few exceptions the animals thus purchased possessed solid merit, and seemed to be purchased without regard to cost and because they possessed certain qualities which thoughtful breeders are striving to possess in their herds. I may add that the liberality and enterprise of a single individual, Mr. Albert Crane, of Durham Park, Marion county, Kansas, has made these valuable additions to the live stock interest of our State.

It was with a view to examining with his own eyes and fingers the shorthorns of Durham Park that the writer, accepting the generous hospitality of Col. J. B. Anderson, of Junction City, was driven a few days since, behind that gentleman's beautiful team, out of Junction bound for "Crane's Ranch," the place where a farmer assured me was kept "the best stock of Durhams in the country." It must be confessed in the outset that when I thought of a fifty mile ride over an open prairie beneath a July sun, I was a little staggered and felt somewhat as Mr. Weller said so sadly of marriage: "It seems to be going through a great deal to gain a little." But in all this we were mistaken. The journey, without involving much of comedy or tragedy, was exceedingly pleasant and profitable, affording many suggestive hints, which is our sole excuse for writing this article.

For upwards of eighteen miles our route lay up Lyons creek, an old settled and densely populated region abounding in farms, churches, schools, houses and barns that would be no discredit to western New York or southern Michigan. Leaving Lyons creek we strike across the prairie and over the "divide" separating Lyons creek from Cary creek as it is called on the maps. I have the authority of Col. Phillips for saying that this latter name is a mistake. Years ago that gentleman in selecting a mail route crossed this rivulet and after his wife he named it Carrie creek. Nothing so much impresses the visitor to these regions as the wonderful rapidity with which they are becoming settled. Said Col. Anderson, pointing to the elevated land upon the opposite side of Carrie creek: "In 1869 I followed that divide from the head of the creek to the Kansas river, and during the entire distance not a house or cultivated farm was in sight." Now nearly every available half section is occupied, and smiling homesteads, long ricks of grain and waving fields of corn are constantly in sight. Twenty years ago it was fashionable to speak of all this region as the "Great American Desert." Investigation has long since softened the asperity of this name but people generally have long since refused to think or speak of this section as capable of the support of anything beyond a nomadic population. To-day this latter idea stands as completely exploded as the former.

GERALDINE

or, as it is sometimes called, "Huston

Ranch," was the first place at which we alighted after leaving Junction City. This magnificent estate, the joint property of my friend, the Colonel, and the Huston brothers, consists of 5,280 acres situated in the valley of Carrie creek, Dickinson county, of which two miles square are under fence and largely under excellent cultivation. I am able to present these figures only after a considerable expenditure of mental arithmetic; these gentlemen have so long been accustomed to handling immense tracts of real estate that the acre has lost its significance as the unit and they speak of a body of land as consisting of so many sections. As a part of the stock of this farm I may mention five hundred and fifty head of native cattle, a nice little herd of fifteen head of pure bred shorthorns, and fifty head of horses and mules. But what pleased me more than anything else was the fine field, fourteen acres, of

TIMOTHY GRASS

which I found here. This field of grass has been seeded something more than a year, and, although upon the highest, most exposed and I suspect the poorest part of the farm, has made an excellent sod, and just now a large part of the field shows a good crop of seed. I commend these facts to that large class who persist in the statement that the "tame grasses" won't grow in Kansas.

This experiment of the Huston brothers seems to me to be a grand step in the right direction. I find that universally the question uppermost in the minds of thoughtful farmers is "What have we to take the place of the rapidly failing prairie grasses?" Let me put the question in as plain a light as possible. Suppose you own a farm of one hundred and sixty acres, all fenced, and the lands surrounding yours in the same condition, as will be the case over a large portion of central Kansas in ten years, what are you going to do for pasturage, to say nothing of hay, for the neat cattle and working animals of the farm? You say you will reserve as permanent pasture a part of the original prairie, but prairie grass will not stand this close cropping. That it will fail rapidly and its place be supplied by weeds is the experience of every one who has given this matter a trial. I believe that this question as stated above is the question in Kansas farming and one that ought to be discussed the coming winter in every grange and farmers' club throughout this broad State.

In walking over the beautiful natural meadows of the Huston brothers we had constant evidence of the near presence of those warm friends of the farmers

MEADOW MOLES AND TOADS.

Indeed the latter were omnipresent, while the little mounds that appeared at intervals about the meadow told of the industrious lives of their co-laborers beneath the ground, the moles. Nearly every farmer seems to consider it as much his duty to slaughter these little creatures as to plow or cultivate corn. Nearly all of the agricultural papers contain figures of horrible devices for taking the lives of these little creatures, and receipts without number for "poisoning moles." And for what? Do they eat grain, or grass, or roots? No. Scores of them have been slaughtered and their stomachs examined, but not the least vegetable fibre was found. Their sole offense was in heaping up those little mounds which a light roller or even a foot-fall will level. Aside from this one offense their short lives are a benefaction. Pos-

sessed of enormous appetites and a restless activity, during all the long night they are searching out their legitimate prey, those dreaded enemies of the farmer, worms and larvæ of various kinds.

Ugh! I heard a lady exclaim the other day as a brown toad clumsily waddled from her path. Now, Madam, it is true that this brown fellow is not handsome; his features are not classical; his form is not exactly fashionable; worse than all he is a worker and a very thorough worker, for he has a trade and one that he knows well. All night long he is searching with his inquisitive eyes for grasshoppers, slugs, larvæ and beetles, and the number that he captures in his short life-time is simply incalculable. The English gardeners will cheerfully pay two to four shillings apiece for them. Not many years ago I saw an account of a large importation of toads to France for the Emperor's gardens in Paris.

[Concluded next week.]

TELEGRAPHY

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, AUGUST 7, 1875.

No. 16.

THE INDUSTRIALIST.

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BY THE

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OF THE

KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

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A. A. STEWART, Manhattan, Kansas.

Farming and Stock Matters in Dickinson and Marion Counties.

BY PROF. E. M. SHELTON.

[Concluded from last week.]

Without a word for or against the system which makes it possible for wealthy individuals and corporations to acquire these immense tracts from the "national domain," I cannot but think that the State at large has been benefited by it beyond computation. A score of facts bear me out in this statement. Sir George Grant, upon his townships in Ellis county, by the importation of thousands of the best class of immigrants, of blooded horses, cattle, sheep and swine, is doing in the western part of the State precisely what Messrs. Anderson and Crane are doing for central Kansas. It is useless to deny that the fine buildings and stock, the miles of fences and the cultivated fields that we saw on this strip would not be in existence had the law from the start given the public lands to "actual settlers only." I doubt not that fully two-thirds of the immigration to Kansas the present year will be the result of the persistent advertising of the land-grant railroads. One of these roads during the past season has succeeded in beguiling from their northern homes thousands of the most valuable class of Russian peasantry; and by a still more masterly stroke of policy this same railroad has succeeded in inducing all the editors and penny-a-liners east of the Missouri, for whom a free ride had any charms, to see and "write up" the beauty and fertility of the great Arkansas valley.

From Geraldine we took a nearly south-westerly direction towards a point on

TURKEY CREEK,

distant fifteen miles. It should be stated that Dickinson is a herd law county, and from what we saw on this trip I am satisfied that a large share of its prosperity is attributable to this fact.

It is something novel, almost startling to an eastern man, to find himself riding hour

after hour through huge fields of corn and grain without fences or hedges and without need of them. I have read much the present season of the wheat crop of Dickinson county, and will confess that a large share of these statements I have credited to the imaginations rather than the understanding of the writers; but the half has not been told. On every hand we saw sections of recently broken prairie, fields of corn, wheat and oats, and stacks of wheat without number. In a single field, owned by a German, we counted sixteen long ricks, not of wheat in the straw, but of wheat heads. At another time we rode by the side of a continuous wheat field two miles in length and extending I know not how far back. We cannot deny that if these farmers had been obliged to hedge and fence their fields they would not have been here to-day. Let us place the credit where credit belongs; it is the beneficent action of the herd law that has wrought this agricultural miracle. We wish it distinctly understood that with the facts we now have we are first, last and all the while in favor of the herd law.

During the second day's drive we saw for the first time in operation that most perfect piece of farm machinery,

THE HEADER.

As its name implies the header cuts off the heads of the wheat with a small portion only of the straw, leaving most of the straw standing. This header is driven by four horses and is thrust forward ahead of the team. The driver uses no lines but rides in the rear of the machine, between the teams, from which position he readily takes in the course he wishes to follow. Within convenient reach are two levers, one for elevating or depressing the sickle bar; the other is connected with a wheel upon the ground which, acting very much as the rudder of a ship, changes the direction of the pole at which the team draws, and consequently the course of the machine. The heads as fast as cut—and it cuts a ten-foot swath—fall upon an endless apron which delivers them to a wagon driven at the side of the machine. The header as we saw it at work was cutting oats badly lodged, and delivering the grain upon the ground, so that I am unable to speak from my own observation as to its value in comparison with the ordinary reaper. I am informed that five men, four teams and two wagons will with the header harvest and stack from twenty to thirty acres per day. To the question which was the better, reaper or header, put by Col. Anderson to the very intelligent German operating this machine, we were assured that it was as much superior to the ordinary reaper as the reaper to the old-fashioned cradle. We were further informed that the header cost new \$290. If the farmers could be induced to plow under the straw thus left upon the ground, instead of burning it as now generally practiced, the header would be a formidable rival of the reaper even where the farmer is obliged to deal gently with his soil.

The writer begs to make the startling

announcement that at last he has reached Crane's ranch or, to use a better name,

DURHAM PARK.

He feels justified in leaving a hiatus between this point and Turkey creek, from the consideration that after his protracted daisy-picking among the "grasses," and the skirmishing that has been done with economic Entomology and Zoology, to say nothing of farm machinery, the bilateral symmetry of this article will be best maintained by such omission.

In attempting to write what we saw at Durham Park, I am disposed to follow the example of the worthy clergyman who announced as his text, "The world, the flesh and the devil." Said he, in introducing his sermon, "We shall dwell lightly on the first, skip the second and hasten to the third." By some such hop, skip and jump the writer expects to reach the shorthorns, the real object of his visit to Durham Park, after a very brief mention of the hospitable reception that we met, the magnitude of the estate and the farming operations thereon conducted.

To quote from the catalogue of the Messrs. Crane, "Durham Park is on the Cottonwood river, thirty miles south from Abilene, on the Kansas Pacific railroad, and twenty-five miles north from Peabody, on the Atchison, Topeka & Santa Fe railroad." The estate consists of ten thousand acres of land, of which seven thousand acres are under excellent fences. The general superintendence of this immense farm devolves upon Mr. L. D. Reed, a gentleman of whom I have heard nothing but good words. Certainly the present condition of Durham Park speaks volumes for the executive ability of the superintendent. Major D. W. Crane, who holds the shorthorns in the hollow of his hand, I found an exceedingly pleasant gentleman who will talk to you of "pedigrees," "crosses," "strains," etc., as only the enthusiastic, well-posted breeder can.

Mr. Reed tells me that the cropping of the present season consists of seven hundred and seventy acres of corn, one hundred and sixty of rye, two hundred and sixty of oats, ninety-five of Hungarian, and two hundred and thirty acres of clover, timothy, and blue-grass recently seeded. I was pleased to notice that Mr. Reed was deeply interested in what we are attempting upon the College farm with the "tame grasses." He proposes another year to make a considerable experiment with alfalfa. The stock of Durham Park consists chiefly of 2,300 head of native and grade cattle, and last, but not least, 180 head of pure bred shorthorns.

Of the shorthorns of Durham Park eleven are imported animals, and among the families represented I find Louans, Miss Wileys, Nannie Williamses, Young Marys, Young Phillises, Jubilees, Bright Eyes, with a sprinkling of the unfashionable but very useful 17s.

At the head of the herd stands Lord Bates 2d, a pure white, got by 24th Duke

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, AUGUST 7, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

As educational institutions usually open late in September, the press of Kansas will confer a favor by announcing that:

The next term of the Agricultural College begins Thursday, August 26th.

THE next report of the State Board of Agriculture will contain more useful information about Kansas, presented in an attractive form, than any similar work heretofore published in any State. The city councils of Atchison, Leavenworth, Junction City, Wyandotte, Topeka, Abilene and Salina have already appropriated ninety dollars each for preparing and electrotyping sketches of their respective towns, buildings, etc. Burlington vigorously led off in the work. Many other towns are arranging for similar exhibits. Prof. Worrell is busily engaged in supplying the engravers with "copy," and the artistic character of the engraving and printing will be far ahead of that given in the last report.

THE remarkable absence of winds throughout the State is a matter of quite general comment. Probably during no season since the settlement of Kansas has there been less of even moderate winds than during the summer of 1875. Nor is this a matter of curiosity and speculation alone. It has a practical import that thoughtful farmers will not be slow to recognize. The calm weather has not only been favorable to a very large growth of stalks and blades in the corn field, but it leaves this valuable fodder in the best possible condition. We most earnestly counsel our farmers to cut up and, as soon as husked, stack their stalks, thereby not only saving a valuable fodder but removing the common harbor of chinch-bugs and other vermin.

Kansas Fruit and Fruit Culture. No. 4.

The fruit farm of Welcome Wells, Esq., consists of thirty-five acres; about twenty-five acres already in fruit trees, and ten acres covered with shelter belts surrounding the entire tract. The location is on good second bottom, being underlaid with sand from twelve to twenty feet beneath the surface. The soil is a uniform black mold several feet deep, gradually changing in the subsoil to a yellowish clay. Mr. Wells commenced planting trees here in 1861 and has continued to plant each year until 1874, and has now twelve hundred apple trees with a large range of varieties, besides a large number of peach, pear, plum and cherry.

There are several interesting features con-

nected with this plantation. The first is the thorough protection afforded by artificial shelter belts on all sides. This shelter is dense and covers in the aggregate more than one-fourth the ground. The trees in this belt are native and on the north side consist largely of red cedar. The maximum influence of shelter belts may naturally be anticipated here in years to come. It is worthy of note that almost the only injury from last year's defoliation and drought is to be found on the south side, extending from two to four rows from the shelter belt. It is a fact to be noted that the row of trees next to the shelter belt, and only eighteen or twenty feet from it, is in good condition; old peach trees being here in a healthy state, while the second and third rows are somewhat injured. The injury, however, even here is comparatively slight. While there may be in the entire orchard a hundred apple trees that are more or less hurt, probably not more than ten will prove an entire loss. The great mass of the trees are in splendid condition and give as much promise of success in fruit culture as at any time in years past.

Last year when the grasshoppers came, July 31, all the older trees were laden almost to breaking with fruit. Probably there would have been not less than three thousand bushels of apples, while there were many bushels of peaches, pears and plums. In a very few days scarcely a leaf was to be seen in the orchard, while a large per cent of the fruit remained on the trees to tax the vitality of the leafless branches. Much of this fruit matured, though inferior in quality, so that about twelve hundred bushels were actually gathered. To one knowing these facts it must be a subject of wonder that these trees should be so healthy and vigorous to-day. We noticed, as in splendid condition, Ben Davis, Rawl's Genet, Winesap, Cole's Quince, Fulton, Maiden Blush, Early Harvest and many others. The Willowtwig blighted badly last year but is all right this year. As far as the apple orchard is concerned, in reviewing the losses occasioned by the exceptional disasters of last year we may reduce them nearly or quite to the loss of the crop last and the present year.

The pear trees do not promise to be a success. They have blighted badly. A very rich soil and high culture may have something to do with this.

The peach trees have suffered less than in many other orchards. Mr. Wells says "enough of them are alive." A fair crop of peaches may reasonably be anticipated next year.

The apple trees in this orchard are almost all trained low, and as a consequence there is very little injury from sun scald on the southwest side. Another excellent practice

we saw here, and that is the tying up of the young trees, when first transplanted, as high as it can be conveniently done, with hay, and leaving it on for at least two seasons. In this way the young trees are kept in a healthy condition and thoroughly protected from borers and rabbits.

Mr. Wells has great faith in the honey locust for hedges, and shows in confirmation of his views a very fine piece of hedge of his own planting.—[Prof. Gale.]

Board of Education.

An examination of candidates for State Diplomas and State Certificates will be held in the parlors of the Adams House, Manhattan, on the 10th and 11th insts. Information respecting qualifications for diplomas, and for five and three years' certificates, will be mailed on application to J. A. Anderson.

The following time-table and rules of the Board will be strictly observed:

TUESDAY, AUG. 10TH, 1875.

Inspection of Testimonials, 8 to 8:30.

English Grammar, 8:30 to 10.

Arithmetic, 10 to 11:30.

Botany, 11:30 to 12.

Algebra, 2 to 3:30.

Reading, 3:30 to 4:30.

United States Constitution, 4:30 to 5.

Latin, 5 to 6.

WEDNESDAY, AUG. 11TH, 1875.

Natural Philosophy, 8 to 9:30.

Descriptive Astronomy, 9:30 to 10.

Drawing, 10 to 10:30.

Physiology, 10:30 to 11:15.

Chemistry, 11:15 to 12.

Theory and Practice of Teaching, 2 to 3.

United States History, 3 to 3:30.

Geometry, 3:30 to 4.

Geography, 4 to 5:15.

Trigonometry, 5:15 to 6.

The attention of candidates is invited to the following rules:

1. The name, age and post-office of each candidate shall be written by the candidate in a register prepared for the purpose by the officer in charge of the examination.

2. During examination, candidates shall be seated as far apart as possible, and shall not be allowed to communicate with one another.

3. Answers should be brief, but must be complete in logical exposition, and in grammatical structure. Mathematical answers must show the process, as well as the result, in each case.

4. In grading candidates, due weight shall be given to the character of manuscripts in regard to penmanship, and neatness of arrangement of answers.

5. The standing of candidates, in regard to spelling and composition, shall be determined by the character of their respective manuscripts in these respects.

6. One hundred per centum shall denote perfection.

7. An average standing of ninety per centum shall be required for a diploma or certificate.

8. The average grades of candidates shall be determined by the State Board of Education, at a meeting to be held at 3 P. M., 24th inst., in the office of the State Superintendent of Public Instruction, at Topeka.

By authority of the State Board of Education.
JOHN FRASER,

State Sup't of Public Instruction.

THE INDUSTRIALIST.

SATURDAY, AUGUST 7, 1875.

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The Barn is done, and one-half of the roof of the mechanical building is shingled. The roof will be finished next week.

Hon. B. L. Kingsbury, chairman of the Executive Committee, is presiding over the regular monthly deliberations of that solemn body with great dignity, power and glory. The estimates on the buildings to date have been audited and paid.

Here is a \$26 paper bill and only \$5 in the INDUSTRIALIST's pocket-book. Therefore, we want thirty new subscribers, seventy-five cents each in advance, immediately if not sooner; or, we want advertisements at the rate of one cent a word, nonpareil, or two cents a word for special notices. Send them in, and be quick about it. That Business Manager hasn't been around lately. Where is he, anyhow? By the way, the Alpha Betas are ahead.

The prospects for a large attendance at the coming term are very good. Nearly all of the old students from whom we have heard report first that they will be promptly on hands themselves, and second that one, two or "several" others will accompany them. The last instance is that of Humphrey, who brings his brother and sister. Many new students write that they will come if it is possible to get the means. While the general crops of the State at large are splendid, yet, in many cases, they only make the farmer "even" on the losses of last year, so that he is disposed to retain his children on the farm in hopes that next year's crops will give more money. And this fact will materially affect the attendance at all the State institutions. Still, if the farmers would figure down—which is rarely done—the real cost of boarding their children at home and the cost of boarding here, they would find that the difference is far less in cash than is generally supposed, and infinitely less than the worth of the practical knowledge which is here gained.

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Miss M—, Blue Rapids:—Can I earn money enough to pay my board?

So far as the College is concerned you cannot, because it does not need performed the kind of work which, probably, you are only qualified to do. Some of our best students have paid for their boarding by doing household work, or sewing; but such arrangements are made by the students themselves. In time we hope to see some of our departments so far advanced that a girl can, on her own account, manufacture articles that will give her better wages than the price paid for personal service; but it takes time for her to acquire the extra skill by which this extra price can alone be secured.

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The superiority of one job printer over another depends upon superior taste and not upon swiftness. As the artist has many different colors with which to make a picture, so the job printer has many kinds of type, with different faces, different shadings and of different sizes. His success depends upon his ability to make a well balanced, proportioned and striking advertisement with these. But evidently this ability, apart from his knowledge of the effect of fonts, depends on what is vaguely termed a "true eye" or a "correct taste." How is this taste to be acquired? By studying proportions and shadings—that is by becoming skillful in the use of lines. Hence, while the job printer does not directly need the pencil in setting type, yet he does need exactly that taste which can be easiest acquired by the use of the pencil in drawing. So that the time he spends in the study and practice of industrial drawing is worth gold to him as a job printer. The same principle holds in every trade. Each depends upon some branch of knowledge, the possession of which has a cash value to the workman. And because of this fact we do not receive students into "industrials" only. Intelligent workmen are the best workmen. It is the pupil's advantage, not that of the College, which determines such

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Office south side of Poyntz Avenue, between third and fourth street. Residence corner third and Pierre streets. 16-26

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SHORT-HAND REPORTING.

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BOARDING HALL.

I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week. 13-26 A. TODD.

MONEY! MONEY! MONEY!

Loaned on long time, and at LOW RATE OF INTEREST, on first class improved real estate. I can give you money now at hard time prices. Interest AT SEVEN PER CENT! Payable semi-annually. Commissions light. Don't make a loan till you call on

L. R. ELLIOTT, 11 Manhattan, Kansas.

MECHANICAL

DEPARTMENT.

Regular Instruction and Practice in
**Carpentry, Cabinet-Making, Turning,
Scroll Sawing, Wagon Making,
Blacksmithing, Painting.**

The Department is well equipped with tools and machines for the student's use.

Dr. Patee.

11

PRINTING! PRINTING! PRINTING!

DAILY

Instruction and Drill
in the work of a

First-class Printer.

The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that Taste necessarily exercised by every good Job Printer.

THE

PRINTING DEPARTMENT

is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer.

Besides regular class instruction in printing, the weekly publication of the Industrialist by the Department furnishes advanced students the requisite drill in newspaper work.

[Concluded from first page.]

of Airdrie 1725,—recently exported—out of Miss Bates 3d. This is the only pure Bates bull in the State, and one of the few in the country. As a yearling he possesses great promise, is a good handler and well let down in the twist and flank. Although failing a little in the crops and back of the shoulders, I fancy few breeders would notice this if his pedigree was before their eyes. On the whole the Messrs. Crane, and the State at large, are to be congratulated on the acquisition of this "bit of Bates."

Lord of the Lake, roan, got by Imp. Royal Commander 10914, out of Lady of the Lake, represents the other half of the shorthorn world, being a pure Booth. He is a very smooth, even bull, without any very marked developments, and equally without blemishes.

London Duke 13th, got by 5th Duke of Geneva 7932, out of London Duchess 5th, is a bull whose breeding would give him precedence in almost any herd, he having four Duke crosses upon a Mason foundation. The Major informs me that he is using this young animal upon his best cows the present season, and certainly it would be difficult to suggest a better cross.

Imported Lord Abraham 11223 (29056), by Breastplate (19337), out of Lady Zillah, is a bull of wonderful substance as well as excellent breeding. A fair handler, with full crops and a rare fore flank are a few of his good points. Taken as a whole, Lord Abraham would prove a serious rival to Pickrell's famous Breastplate, in any show ring in the world, which is as much praise as we can bestow on any bull. So much for the bulls. There are forty-one catalogued, and if the reader is interested in the ages and antecedents of these animals let him mail a postal card to the Major and obtain a catalogue.

In the pasture we were greeted with a sight that the breeder often sees in his dreams but rarely "in the flesh." Think of eighty of these beautiful, high bred shorthorn cows, representing as they do the skill of all the great names of shorthorn literature! We have only time to notice a few we regret to say.

Pride 2d, got by Laudable 5870, out of Pide, a magnificent roan, was the first to greet us. Col. Anderson pronounces her the finest animal of the herd, and with reason.

Imported Portulacca, by Duke of Grafton (21594), out of Primula, is a beautiful red and has proved a most fortunate venture, having dropped twin heifers the day before our arrival.

One of the neatest creatures that we have seen is Louan Lesley, by Red Duke 7167, out of Susan Leslie. This heifer of the Young Mary family descended from Young Mary by Jupiter, a cow that has probably done more for the shorthorns of America than any other one animal, she having lived to the age of twenty-one and given birth to her sixteenth heifer calf.

Duchess of York 9th is a cow that is well worth riding fifty miles to see. She is a roan, got by the Knight of Canada 6243, out of the Duchess of York 5th. The wonderful rib, and brisket to match, possessed by this cow is something almost startling. A second look shows too that it is not "fore end" alone, but hips, twist and flank are all to match.

The 5th Gem of Grassmere, by Lord of the Manor, out of Wave, is another of the treasures of Durham Park. In the region of the heart and fore flank she is very good.

I notice upon her a smutty nose at which fastidious breeders would doubtless shrug their shoulders.

Miss Wiley 30th, red, got by Star of the Realm 9150, out of Miss Wiley 19th, has as sweet a head as is often seen, with a fine form and fashionable color to match.

And thus we might go on had we time and space at our command. I have attempted a description of only a small fraction of the best of this herd. To all those who are interested farther than this we recommend a visit to Durham Park.

COLLEGE LANDS.

The lands of the Kansas State Agricultural College are located in Riley, Clay, Dickinson, Marshall and Washington counties, and comprise some of the choicest tracts in those counties. As these, with one exception, are herd law counties the value of the land for farming purposes is much enhanced; and the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest lands in the market. Prices from \$5.50 to \$10.00 per acre.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

CHEMISTRY AND PHYSICS

THE most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis. Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry. Photography, Household Chemistry.

Special course in Chemistry for Past-Graduates.

The Laboratories are fully furnished with the best philosophical apparatus and the largest assortment of chemical apparatus and reagents west of the Alleghanies, all of which is for the use of the students.

Gardening for Profit!

Instruction and Drill in

KANSAS HORTICULTURE.

THE NURSERY, ORCHARD,
VINEYARD, VEGETABLE GARDENING,
FLOWER AND LANDSCAPE
GARDENING.

Kansas Forest Culture a specialty.

Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

KANSAS STATE

Agricultural College.

A Thorough and Direct
EDUCATION

FOR THE
Farm, Orchard, Shop and Store.

Tuition Absolutely Free!

The next Term begins Thursday, August 26, 1875.

TELEGRAPHY

Four miles of line, twenty instruments, and daily instruction and drill, by an experienced operator, in sending, receiving and office accounts, reports and book-keeping. No charge, except for blanks, say \$3. Special course of lectures, by Prof. Kedzie, on electricity, battery, etc.

THE COLLEGE FARM

Keeps constantly on hand and for sale, specimens of

SHORTHORN, | LANCASHIRE,
JERSEY, | BERKSHIRE,

AND

ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,
E. M. SHELTON, Sup't Farm.

ENGLISH LANGUAGE.

The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,
HISTORY OF ENGLISH,
STRUCTURE OF ENGLISH,
STUDY OF WORDS,
AND RHETORIC.

Constant practice in the class room, and, if desired, at the printer's cases.

Cut This Out!

It May Save Your Wife's Life!!

SUBSCRIBE

FOR THE

Industrialist!

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

Farming for Profit!

Special Courses in

KANSAS PRACTICAL AGRICULTURE.

Simple Tillage,
Farm Implements,
Comparative Physiology,
Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
Manures,
Feeding,
Buildings.

185 Acres used by this Department.

Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Galloway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

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I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week. 13-26 A. TODD.

MONEY! MONEY! MONEY!

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, AUGUST 14, 1875.

No. 17.

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OF THE

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MANHATTAN, KANSAS.

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Manhattan, Kansas.

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Propagation of Fruit by Long Grafts.

BY PROF. E. GALE.

For three years experiments have been in progress here to determine the value of long cions in root grafting. These experiments have consisted in using various lengths of cion and root; that is, from two to forty inches of cion, and from one-half inch or less to the entire seedling root. In the case of the long cion the grafts when made present the appearance of yearling trees or small two-year-olds. In the latter case the grafts when made present the appearance of yearling trees. Grafts of this kind have been made of apple, pear, cherry, peach, plum and apricot.

Comparing the entire range of lengths, as above indicated, it has been found that with three to five inches of root and with a full length of cion, say from twenty to forty inches, we have a graft much more likely to live than the ordinary root graft. It has been generally supposed that the exposure of so much wood above the ground, with so small an amount of root, would act disastrously, but experience proves quite the contrary. The ability of the graft to endure drought seems to depend upon the amount of vital force stored up in the cion. While most people believe that we need have no care for the top if we only have a good root, these experiments demonstrate that far more importance is attached to the quantity and condition of the top than is ordinarily supposed. Grafts prepared in this way seem almost or quite as sure to live as ordinary two-year-old trees from the nursery. Not only this, but the growth does not seem checked so much as in the case of older transplanted trees. Some have supposed that if these grafts lived at all they must present a stunted and imperfect growth, but theory is at fault here and, in fact, the amount of new wood corresponds remarkably with the original size of the cion. Hence these grafts present from the first a vigorous and healthy growth. Several thousand pear grafts were prepared in this way last winter and now present a very promising appearance; and when compared with a few thousand prepared in the ordinary manner seem to demonstrate beyond question the superiority of the long cion over the short or ordinary ones.

We do not propose to discuss the reasons for this, to many, unexpected result, but simply to state the fact and note its practical advantages for the consideration of our farmers and tree planters.

PRACTICAL ADVANTAGES.

First, we have a graft that will be almost sure to withstand any changes of climate, making the raising of trees in the nursery much more certain. These grafts can be successfully planted at once in the orchard with as little risk as yearling trees. This, where trees are to be transported long distances, as is frequently the case here, both on account of expense and exposure is a material consideration. We shall in this way reduce very much the first cost of

orchard planting. Assorted lots of these grafts can be done up in one thousand bunches and sent at small cost by express or freight to any part of the State with very little danger of injury or exposure.

This is a matter worthy the consideration of any who may desire to plant an orchard at small cost. While we do not propose to burden the columns of the INDUSTRIALIST with theories, we shall always endeavor to lay before our readers the practical bearings of any experiments that may be in progress here.

Nature in Horticulture.

BY HON. B. L. KINGSBURY.

We hear much loose talk in Horticultural matters about "following nature." This is a very ambiguous expression. One man proposes to "follow nature" by allowing his grape-vines to grow at will, rambling over the tops of trees or covering his trellis; another will omit pruning his fruit trees, allowing them to grow up a mass of brush that will admit neither sunlight nor air; another omits cultivation entirely and relies on mulching; and so on—each one justifying his practice on the plea that he is "following nature," and that nature makes no mistakes.

Nature is extravagant, and not dependent on her crops for bread and butter; she can devote acres of ground to wild crabs, grapes and poison vines, and take no thought of the interest due on mortgaged premises; while the fruit grower must make every rod of ground yield some return in cash for the labor and care bestowed upon it. Hence, in Horticulture we do not seek the conditions or the results of nature. As Shakespeare says, "This is an art which does mend nature—change it rather; but the art itself is nature."

Horticulture is the wise application of natural sciences, and the fruit-grower who understands the laws of nature governing the growth of plants "follows nature" only in this sense, that he obeys or violates them according to the object to be accomplished. If he wants pears without waiting ten or fifteen years, he violates the law of relationship by grafting his pears upon the quince root; this threatens the life of the tree, and he knows that anything that strikes at the life of the tree tends to throw it into fruit bearing; the result is his pear trees are dwarfed, and produce fruit in three or four years from the bud or graft. For the same reason he will give his orchard a severe pruning in the summer, knowing that it is a blow at the vitality of the tree to prune it in the growing season, and by checking the growth he forces his trees to form fruit buds instead of all wood buds. Shakespeare understood this; he says: "We, at time of year, do wound the bark, the skin of our fruit trees; lest, being over proud with sap and blood, with too much riches it confound itself."

In transplanting trees we find that fibrous-rooted plants are easily moved, recover

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, AUGUST 14, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

As educational institutions usually open late in September, the press of Kansas will confer a favor by announcing that:

The next term of the Agricultural College begins Thursday, August 26th.

THE Potter press in Martin's State Printing Works ran off ten thousand impressions of a map of the A., T. & S. F. R. R. in seven and a half hours,—an average of 1,334 impressions an hour. That is quick work, East or West.

LAST year has demonstrated that the subsoil, in respect to its character and capacity for drainage, is a matter of much more importance in fruit culture than most people have been hitherto willing to admit. The sooner we direct our attention to this matter, in the selection of orchard sites, the greater will be our future success.

SPECIAL attention is called to the fact that as the vitality of our trees in most parts of the State was seriously injured by the disasters of the last year, they are this season in fit condition to suffer materially from the borers, and need special watching. This is especially true of trees transplanted last spring. Go for the borers. Dig them out.

CERTAINLY the "reaction" that has been so often predicted since the sale of the 8th Duchess of Geneva at \$40,600, has not set in yet. At the recent shorthorn sale of Mr. B. F. VanMeter, sixteen females sold for \$42,700, an average of \$2,669. Even the horse interest seems to be looking up. We notice that the Duke of Westminster recently purchased the thorough-bred stallion Doncaster for a little less than \$80,000, the highest price ever paid for a horse.

The Corn Crop.

From every quarter of the State the cheering news reaches us that the corn crop of 1875 is full of promise. Taking this into account, with the fact that an unusual acreage has been planted the present season, and that a few more days of sunshine will place this crop beyond the reach of chinch bugs and grasshoppers, and it is something more than speculation to assert that the corn crop of 1875 will be equal to, if not greater than, that of any previous crop in the history of Kansas. This being the fact, the question,

how shall this crop be disposed of so that the best result shall be obtained? becomes a matter of paramount importance. Of course the phrase "best result" is a general one, having different meanings with different individuals. Circumstances will compel one man to sell as soon as the grain is out of the husk, and another will be obliged to feed the crop to his cattle and pigs. We insist that, with the experience of the past two seasons, every farmer shall, in so far as he is forehanded, hold over his corn until something is known of the crop of 1876. While it is true that, through the years, Kansas, in comparison with her sister States, has a full average of rainfall, it is none the less true that from the geographical position she will ever be liable to the occasional recurrence of such seasons as the last. The cheapest of all ways to "bottle up" these bountiful rains, is in the corn crib. The whole question lies between the farmer and his merchant. If the farmer refuses to look into the future for himself, the merchant will for him, and his charges will be nothing less than the full "pound of flesh."

This corn crop may be made to contribute to next year's success in another way. Our store stock deserves more generous treatment than it ordinarily receives. Aside from the question of humanity there is "money" in a more liberal policy. We are satisfied that in no way can this corn crop be better disposed of than by feeding it in part to the store stock. A few ears of corn each day fed to a steer amounts to a very few bushels for the winter, but it makes all the difference between an animal that will be marketable at top prices any time after June, and another animal that cannot be disposed of until August, and then only as a "grasser" or "scalawag." Every one who has had experience in wintering stock knows the difference between animals that have been thus differently treated.

We earnestly counsel our farmers not to allow this magnificent corn crop to be wasted and frittered away, as has too often been the case in years past. The rather let us place this crop so that it shall tend to make '76 equally with '75, a profitable year for the husbandman.—[Prof. Shelton.]

The Agricultural College.

The Agricultural College was created to furnish a "liberal and practical education to the industrial classes in their several pursuits and professions in life." The industrial classes are those who practice any of the industries, as distinguished from those who practice the "professions" of law, medicine, theology and teaching. By far the greatest industry of Kansas, both as respects the amount of capital invested and the number of persons engaged, is that of agriculture, which includes stock growing and horticulture as well as the raising of grain. The worker in wood, stone or metals; the dress-

maker, clerk, telegrapher, printer, engraver, book-keeper, etc., are also industrialists; but the farmers of Kansas greatly outnumber all of them put together. Hence, while providing so far as it can for the education of mechanics and business men or women, the great object of the Kansas Agricultural College must be, AND IS, to furnish such an education as will best qualify men to make the most money in the easiest way by actual farming. That is what Practical Agriculture means, and what a practical education for farmers must necessarily be. "Practical" means "fit to be practiced;" and there is a deal of education that is not fit to be practiced, and that nobody ever does or will practice.

There are two ways in which the members of the Faculty can promote the practical education of the industrial classes: First, by arranging and teaching the truths of the particular science represented, with direct reference to the practical value of those truths to the pupil when he shall engage in farming for profit; second, by presenting to the working farmers of Kansas those facts or suggestions which may enable them to farm more successfully. And so with respect to others of the industrial classes. The first of these things is done in the recitation rooms; the second is sought to be done through the columns of the INDUSTRIALIST. A chief object of this journal, as announced at the outset, is "to contribute, so far as it can, such practical facts of science as may increase the profit or pleasure of the farmers, mechanics, or business men or women of Kansas."

Our associate editors, from the very nature of their life-long study and of their daily occupation, have rare qualifications and peculiar fitness for just this work. It is both their inclination and business to be posted and to keep posted in exactly those facts of their several sciences which the farmer wants to know.

The articles furnished by these gentlemen, as our readers know, have been terse, timely and of practical value. A score could be selected, any one of which is worth in cash to Kansas farmers ten times the yearly subscription. Not only is a great variety of subjects discussed, but each is plainly and vigorously presented with direct reference to its utility in this State, as distinguished from eastern States. As these gentlemen will soon have returned to their posts from an invigorating vacation, our readers may anticipate still greater variety. A paper is not to be judged by the size of the page, but by the quality and quantity of the matter it contains. The latter depends upon the size of the type, and whether it is set "solid" or "leaded." Notwithstanding size, the INDUSTRIALIST averages more reading matter than some of the leading dailies of the State.

THE INDUSTRIALIST.

SATURDAY, AUGUST 14, 1875.

New students are already on the ground arranging for quarters.

Prof. Wm. K. Kedzie has arrived in New York and may drop in on us any day now.

The amount of fun one has when 75,000,000 flies insist upon assisting the type-setter is—excruciating.

Prof. Ward and wife arrived Saturday morning. They take the house occupied by this aforesaid last term.

For the \$7,500 appropriated by the last Legislature, the College has obtained more work than has ever been done either by the State or individuals.

The new Mechanical building is under cover, and the remaining work will be pushed. The Barn is ready for the chairs, apparatus and students.

The resident Regent is in a brown study over the conundrum propounded by the Hon. B. L. Kingsbury in the racy article on "Nature in Horticulture."

The Misses Melva Sikes, Elsie Thorpe and Ella Winne called on us this week. Miss Sikes has been visiting friends in Manhattan. She will attend College the coming term.

The examination announced by the State Board of Education was held on Tuesday and Wednesday. Four candidates for certificates appeared. County Superintendent J. F. Billings will please accept thanks for his kind assistance.

Col. Dennis, Vice-President of the Kansas State Centennial Managers, made an effective presentation of the aims and plans of that Board, Tuesday evening. An auxiliary society for Riley county was organized, and a committee consisting of Mayor Higinbotham, L. R. Elliott and G. C. Wilder was instructed to report permanent officers at an adjourned meeting, August 17.

Prof. Shelton has received for the College the exceedingly valuable donation, by the authors, of a complete set of the works of Lawes & Gilbert, Rothamstead, England. For over thirty years these gentlemen have conducted the most reliable and extended experiments in agriculture ever made. Many theories of the most eminent scientists—Liebig for instance—have been demolished by the facts practically determined in their fields, stalls and pens. On all questions concerning "farming for profit" in England they are universally recognized as standard authorities. Many experiments which are suggested for trial they have fully made and settled. Our readers will be apt to hear from Prof. Shelton on several of them.

The College Farm.

The farm, as the work-shop of the "Farmers' course," ought to have a peculiar interest to all those who are interested in the College as an Agricultural College. Without attempting a discussion of any of the various opinions in existence as to what the college farm ought to be, we wish to show in this article to the readers of the INDUSTRIALIST what the farm is, its course of cropping and the stock that it maintains.

The College farm, exclusive of the Horticultural department, consists of nearly two hundred acres of upland prairie, of which about one hundred and thirty acres are "under the plow." During the present season crops have been grown in acres as follows: Corn; 30; oats, 25; wheat, (winter) 20; barley, 7; peas, 1; timothy and blue-grass, 17; millet and Hungarian, 10; mangel-wurzels, 2; alfalfa, 1½. For the season, these crops are generally good; the corn, barley and mangels especially so. The one and a half acres of alfalfa were sown the past spring, by way of trial, and, it is but fair to say, promise to be a permanent success in this locality. This plot now shows a growth of from twelve to sixteen inches of top, with tap-roots scarcely inferior in length to the top. In saying that alfalfa promises

to be a permanent success in this locality I speak from experience beyond that of the present season. In the spring of 1874 we seeded one-half acre to alfalfa; this plot we were obliged subsequently to use for pig yards, and the whole was thoroughly depastured. Despite this severe treatment, combined with protracted drought and the severe winter of 1874, the following spring showed a considerable growth until again fed off.

The stock of neat cattle belonging to the college farm consists all told of eighteen head of pure bred animals, which number is divided among the different breeds as follows: Shorthorns, 7; Devons, 6; Jerseys, 3; Galloways, 2. As individuals these animals are excellent of their kind; the Shorthorns especially so. These latter are mostly of the very popular Young Mary sort. Two of our cows in very moderate flesh recently averaged in weight 1,550 pounds.

Of swine we are now breeding the best strains of Berkshires, Essex and Lancashires, though chiefly Berkshires and Lancashires. Our Berkshires are regarded by competent judges as being among the best. We have pigs of this sort, farrowed in November last, that weigh 220 pounds in store condition. It will not be out of place to add that we are constantly selling young breeding animals of the above mentioned sorts to the farmers at lowest prices. During the past year several hundred dollars worth have been thus disposed of.—[Prof. Shelton.]

Butter.

The following letter explains itself. I first addressed a letter to the editor of the Rocky Mountain News for information in regard to the butter market of Denver. He replied that himself and friends usually paid fifty cents per pound for butter for their tables, and referred me to one of the leading grocery firms in Denver for the desired information. There is no doubt that butter-making as a business would pay well in Kansas:

DENVER, Col., July 28, 1875.

PROF. M. L. WARD,
DEAR SIR:—In reply to your inquiries touching the butter trade of Colorado, we are glad to give you what information we are in possession of. The bulk of the butter sold in Denver and throughout the State generally comes from Kansas, and is usually sent here from the first of November to the first of May, comprising about six months of the year. 1. Of this supply Denver takes, from first of November to first of May, 400,000 pounds; other points in the State 200,000 pounds. 2. This supply is largely from Kansas. 3. The quality is generally poor. 4. No first-class butter from Kansas ever seen in this market. 5. Average price of butter for six months named, twenty-eight cents. 6. Butter for this market should be packed in regular butter-tubs ranging from thirty to sixty pounds each.

We make something of a speciality of butter in our business, but do but little in Kansas products from the fact that the quality is not such as our trade demands.

Our supply, in winter, comes from New York dairies principally, and some considerable from Ohio and Illinois. We ship only during the fall and winter months, say from 1st of November to 1st of May, the balance of the year we get supply from our ranches. We, ourselves, handle near 100,000 pounds of butter annually, but ninety per cent of this amount is butter very much above the quality of that which comes from Kansas to this market.

It seems to us that a dairy located in your section that could make such butter as the New York or Elgin dairies, could find a market here for the bulk of their product at prices that would pay well on such investment.

Yours Truly,
WINFIELD & HODGES.

MONEY AND LANDS.

College lands exempt from taxation for seven years. Railroad lands on eleven years' time at seven per cent interest. Private lands at from \$3.50 to \$5.00 per acre. Improved farms at from \$7.50 to \$20.00 per acre. Money to loan at seven per cent, five years' time, on improved farms. Houses to rent or sell at low figures. For any or all of these, address L. R. Elliott, Manhattan, Kansas. 17

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Mrs. Williston, whose residence is within a convenient distance of the College, will accommodate sixteen boarders. Rooms furnished, including bed and bedding. Board and lodging at the rate of \$3 per week, the student to furnish wood and lights. Gentlemen preferred. 17

HOUSE TO RENT.

Situated near the old college building, containing six rooms. Will rent the whole, or in sets of two rooms each, at the rate of five dollars per month for two rooms. J. E. PLATT.

Dr. Patee.

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AND
ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address,
E. M. SHELTON, Sup't Farm.

Special for Woman.

Physiology and Special Hygiene.

Special Lectures on
FARM ECONOMY,
By Prof. Shelton—the Dairy, Poultry etc.

GARDENING,
By Prof. Gale—vegetable, flower, commercial and ornamental.

HOUSEHOLD CHEMISTRY,
By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation etc.

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

[Concluded from first page.]

themselves quickly, and that there is a small percentage of loss in moving them. Many varieties of trees, however, send down a naked tap-root with very few fibrous or lateral roots. We find that by moving such trees frequently while young we induce the formation of fibrous roots, and that when old enough for permanent planting they can be moved without difficulty or loss. Here is where "art does mend nature." But we are told that this long tap-root which nature sends down, and which art works off and replaces with side-roots, would not have been put there unless it was necessary. In reply to that I would say that nature puts a tail on a pig, and I will venture the assertion that it will puzzle the professors in the Agricultural College, or even the resident Regent, to prove that the pig needs that tail.

I might fill your paper with illustrations to prove that Horticulture is "an art that does mend nature," and that to expect success in "following nature," in the sense in which the expression is usually employed, is an absurdity. The fruit-grower should understand the laws of nature governing the growth of plants, and then make nature the servant and not the master.

Editorial Correspondence.

PARIS, France, July 21, 1875.

I find on my arrival here from Italy a large package of letters from America. Rest assured that I shall be with you promptly at the beginning of the term. I have beyond all measure exceeded my hopes in this journey, and am now engaged in winding up everything. Will sail in the Cunard steamer "Abyssinia," July 31, and, nothing preventing, you may count shortly thereafter on my presence among you in the flesh.

PHYSICAL LABORATORIES.

With the new Laboratory arrangements, as indicated by your sketch, I am much pleased; and shall throw the physical laboratory into full operation the first thing the coming term. I wish you could be with me in visiting these physical departments in Paris. They can't be surpassed on the face of the earth. The one of the University of Paris is perhaps the most unique. It is a long, plain, one-storied building, roofed with glass, the main laboratory extending down the entire central portion, and smaller apparatus rooms opening from this at the sides. The amount and character of apparatus is of course magnificent. Connected herewith is a workshop provided with all manner of tools for the instant preparation of apparatus. Among them the assistant took particular pains to display to me the working of one of our "scroll-sawing machines," which he regarded as a great wonder. Of course I appeared properly astonished at its operation!

The chemical laboratories of Paris, however, are very poor; even those of the most eminent chemists whom I have visited being small and inconvenient. In fact I find that the best men go to Germany for their chemical education, and you can infer from that how superior must be the German laboratories, if they will draw French students. I cannot get time to write more, but it does not matter, as I shall see you soon "face to face." Rejoicing in the anticipation of this pleasure, I am as ever,

Yours heartily,
WM. K. KEDZIE.

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Special course in Chemistry for Post-Graduates.

The Laboratories are fully furnished with the best philosophical apparatus and the largest assortment of chemical apparatus and reagents west of the Alleghanies, all of which is for the use of the students.

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The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,
HISTORY OF ENGLISH,
STRUCTURE OF ENGLISH,
STUDY OF WORDS,
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Constant practice in the class room, and, if desired, at the printer's cases.

COLLEGE LANDS.

The lands of the Kansas State Agricultural College are located in Riley, Clay, Dickinson, Marshall and Washington counties, and comprise some of the choicest tracts in those counties. As these, with one exception, are herd law counties the value of the land for farming purposes is much enhanced; and the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest lands in the market. Prices from \$5.50 to \$10.00 per acre.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

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Simple Tillage,
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Stock Breeding,
Mixed Husbandry,
Rotation of Crops,
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Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Galloway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

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Practical, direct and thorough drill in
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Work in Field, with Tape Line,
Chain, Compasses, Transit and Level.

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TELEGRAPHY

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THE PRINTING DEPARTMENT

is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer.

Besides regular class instruction in printing, the weekly publication of the Industrialist by the Department furnishes advanced students the requisite drill in newspaper work.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1. MANHATTAN, KANSAS, SATURDAY, AUGUST 21, 1875. No. 18.

THE INDUSTRIALIST.

Published Every Saturday,

BY THE

PRINTING DEPARTMENT

OF THE

KANSAS STATE AGRICULTURAL COLLEGE,

MANHATTAN, KANSAS.

Terms of Subscription.

SEVENTY-FIVE CENTS per year, postage prepaid. Ten cents per month, postage prepaid. Single copies, delivered at office, two cents each; by mail, three cents. Payment absolutely in advance! Paper stopped at expiration of subscription.

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A. A. STEWART, Manhattan, Kansas.

Educational Sense.

BY J. A. ANDERSON.

The majority of men who, after ten years of semi-starvation in a "learned profession," find themselves and their little ones facing the prospect of whole starvation, could better increase their income by farming, had they the requisite skill, than in any other way. There are men in every community who remain in a profession, not because they are fitted for it, or because they like it, but only because they can do nothing else. This condition of things is a necessary result of the convergence of our whole educational machinery, from the common school to the University, upon the professions. These must be overcrowded. And it is equally certain that until a boy has chosen his occupation, it is better for him to take the farmers' course in a good agricultural college than to take the aimless course of a literary institution, and find himself, on graduation day, "with the best education his country affords, and—unable to make a living!" In proof of this statement, take, as an illustration, the case of a boy who is able to earn, including boarding, thirty dollars a month as a farm laborer. His wages are equal to the interest on \$3,600 at the rate of ten per cent. In other words, what he knows and can do is worth as much to him as \$3,600 would be if he did nothing. He spends four years at a literary college. How much has he increased his capital? Very few of its graduates can go on the market and at once command situations at more than thirty dollars per month. Usually, two or three years must then be spent in professional schools, and one, two or five years more in waiting for a practice that will pay sixty dollars a month. Or, if the graduate enters commercial life, from one to three years are spent in learning the business. Suppose, instead, that he spends the four years in an industrial college. At graduation, he can command, in the market, sixty dollars per month as the foreman of a grain or cattle

farm, or on his own homestead. Mechanics, printers, druggists and operators can do the same. The student has doubled his capital, or has made \$3,600, when before he had made nothing that was in shape to use. And, with the same frugality, industry and shrewdness which the professional graduate must exercise, he will, at any subsequent period, earn more with the same labor. In other words, his industrial education is worth more, costs less and is more available. It is well for men to look the educational question squarely in the face, and to substitute common sense for traditional and groundless sentimentality.

The Coming Industrial Conflict.

While the interest of the civilized world is centered upon the probabilities of a great European conflict, in which armies numbered by millions shall be engaged, comparatively little attention has been given to a struggle of a very different kind, more lasting in its results and more momentous in its issues, which is surely impending—which, in fact, is already commenced. Without the noisy heraldry of proclamation, without announcement by the beating of drums or salvos of artillery, the war has actually begun. It is a contest among the leading nations of the earth for supremacy in the arts and industries that contribute to the wealth and prosperity of a country. The field of industrial competition is now as wide as the civilized world. Price is no longer determined by the home market and mere local competition; but the labor of nations thousands of miles apart, separated by the great oceans of the globe, are pitted against each other. Every year the elements of skill or taste enter more and more largely into the value of manufactures. These elements have long given France an immense advantage in the industrial conflict. While she cannot enter into competition with England in cotton goods, or in numerous other plain and homely manufactures, she excels her and all the rest of the world in the production of an immense variety of articles requiring taste, elegance and artistic skill. Her silk and bronze goods; her laces, tulles and embroideries; her jewelry, porcelain and earthenware are still unrivaled. And this has been due not merely to the natural taste and genius of the people, but, in a great measure, to the fact that it has long been the policy of the Government to furnish all who desired it special industrial instruction. Not content with the kind of general education supplied by our public schools, France has trained her children with a direct view to some industrial career and to the industrial supremacy of the nation. Hence, mainly, her marvelous sudden recuperation from the effects of her disastrous war with Germany, and her amazing productive power. She has schools of arts and trades and special industries. She has in her workshops and manufactories hundreds of thousands of men and women who have been trained before they began to work in art and science applied to industry. England opened her

eyes to this condition of things when, at the Universal Exhibition at London in 1851, she found herself so utterly surpassed by France in all articles, the production of which demand cultivated taste or artistic training. The English Government at once proceeded to act upon this newly-acquired knowledge. It founded the South Kensington Museum at an expense of six millions of dollars, and which still receives an annual grant of half a million. This institution, following the French plan, furnishes instruction in fine and industrial art, and provides special training, without charge, to those whom Government selects as the most promising candidates for art-masters, and who are intended upon completing their course to take charge of art-schools in various parts of the Kingdom. Germany has also given much attention to this matter. She has established a system of schools for the special training for art workmen, engineers, etc., including her famous mining schools and other seminaries having distinct practical aims in view. Austria and Russia have taken steps in the same direction; and the humiliating admission must be made that, in this respect, the United States is behind nearly the whole civilized world. It is time that intelligent and public-spirited Americans should begin to bestow some serious reflection upon this important subject. We cannot safely allow the rest of the world to distance us in the industrial race. It is clear that the day is past when prosperity can be attained for the manufacturing and artisan classes by mere industry and natural, untrained intelligence. The old conditions are changed and the industrial contest has assumed entirely new aspects. Nothing is plainer at present than that the manufactures which will yield the largest returns for the labor bestowed upon them and which will support the best class of population are those which call for the most knowledge, taste and skill in the workman, and whose value is least dependent upon the first cost of raw material. Our statesmen and law-makers, and the leaders of public opinion, should give their attention to the impending industrial conflict which will soon bring the manufactures of a vast army of trained European workmen into competition with our own, a competition which cannot fail to prove disastrous in spite of "protective tariffs" and all similar devices if we do not speedily take efficient measures for the "education of labor."—[San Francisco Chronicle.]

The number of persons in England and Wales engaged in agriculture, according to the census of 1874, was 1,534,192 against 1,833,295 in 1861, and 1,728,796 in 1871. The latter decade shows a decrease of 10.86 per cent, while in the previous one the number declined but 5.46 per cent. From this fact we would infer that the demand for American products in England is not likely to decrease, but, on the other hand, will constantly increase from year to year. In this item American farmers are deeply interested.

THE INDUSTRIALIST.

SATURDAY, AUGUST 21, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

As educational institutions usually open late in September, the press of Kansas will confer a favor by announcing that:

The next term of the Agricultural College begins Thursday, August 26th.

EVERYBODY is busy with preparations for the opening of the term next Thursday. The change of quarters from the Hill to the Barn gives each head of a department an extra amount of labor in the matter of shifting apparatus, etc.; and, in addition, several of us are moving from one residence to another. As a consequence our columns do not present the usual contributions this week. At the opening and closing of the College year, when all are intensely busy, such a result is inevitable. With this explanation of the case, our readers will undoubtedly excuse the present number.

On the Half Shell.

It is a great thing to have wealth and to be able to use it, so as to draw down upon your head the countless blessings of your fellow creatures. Not long ago a New York lady gave one thousand dollars to the American Association for the Advancement of Science, to be expended at the discretion of a committee of the association. That committee has devoted the money to the publication of a "monogram of all that is known of fossil butterflies." Happy woman! —[Commonwealth.]

It is just such wooden-headed nonsense as this upon the part of some quasi gentlemen of "science" that properly sets them up as public laughing stocks. Associations for the advancement of science in this country frequently ape those of Europe, which are often directed by men of wealth and leisure to the acquisition of antiquarian trifles that men who work for a living care nothing about. When the great luminaries of England's aristocracy flash along these lines, why shouldn't the coal oil lanterns of New York scientists turn in the same direction? That is precisely what many of them attempt. Instead of working along those lines which may lead to the discovery of a cheaper, safer and stronger motor than steam; or those that may give farmers a better grass, grain or machine; or those that may lessen the depredations of insects; or those that may open new and profitable avenues to working women; these "scientists," leaving such investigation to the

"common people," majestically twirl aloft their classic noses and go squinting around after fossil butterflies! They recall the memory of a Boston acquaintance who was so precisely methodical that all the kindling wood in his cellar had to be sawed a given length, neatly tied up in bundles of standard dimensions, and piled due north and south. The wood looked very well. He was proud of it. You had to inspect it. And it took just such a thimble as he was to appreciate such a cambric needle arrangement as that was. The wood didn't burn any better, and the cost was greater than the gain.

There is a deal of precisely this sort of thing in some of the "sciences," if they are to be judged by such disciples as the above. It is true that knowledge is knowledge; but it is emphatically true that much that is called knowledge costs a precious sight more than it is worth and is of no account to anybody except such scientists. And the beauty of the thing is that oftentimes these are the gentlemen who prate loudest about the "higher education" and most deplore the lack in America of such advantages as are found in the old universities of Europe. Many people have come to think that an "education" is not only incomplete but worthless which does not include a ship's cargo of information that is not a whit more valuable than this dead-butterfly-on-the-half-shell, or bird-tracks-on-toast.

We want to see this "monogram of all that is known about fossil butterflies." After engaging a small boy and poker, to punch up the wick that supplies the midnight oil, we shall just wrestle with that \$1,000 monogram published by the American Association for the Advancement of Science. Of course no living species will be described; knowledge of the fossil chaps is the information for which the soul yearns. Don't be too particular about whether the facts are really "known" or not, slap in a few guesses. Hurry it up!

Give Them a Chance.

The fall term of the Agricultural College will commence next Thursday. The prospect is good for a large attendance, but undoubtedly a great many boys and girls will be kept at home who ought to be receiving the kind of education which this institution offers the people. The small grain is harvested and the corn laid by. Most farmers can count with tolerable certainty upon a fair income this year; and they ought to be willing to spend a little more for hired help, if necessary, in order to give their children a chance to store their minds with useful knowledge during the spring-time of life. The State is full of young men and women who have been denied these privileges, but who would be glad to exchange prospective legacies for an acquired education.

Parents need not be afraid that a course at this College will unfit their children for the plow and work-shop. They will not

have the idea insidiously instilled into their minds that it is "more honorable" to gain a livelihood by pettifoggery than by manual labor. On the contrary they will be made to realize that the industrial pursuits are the most independent, and most likely to lead to wealth.

Then give the boys—and likewise the girls—a chance to obtain a practical education: and give it to them now.—[Nationalist.]

Business Reviving.

The Fort Scott Monitor says that extra freight trains are being run on the Gulf railroad in order to carry the grain and stock that are now being shipped in large quantities to the North and East.

A gentleman connected with the Atchison, Topeka & Santa Fe road, says his company is having difficulty in getting cars enough to move the wheat that is offering along the line of that road.

The Kansas Pacific road is sending out large quantities of stock and grain. So of all our railroads.

What does this mean? It means that Kansas, almost for the first time in her history, has got right down to hard pan, and is producing something that she can exchange for money. It means that our farmers have ceased to be land speculators, and have gone to getting wealth out of the soil. It means that the era of the corner lot has passed, and that of the wheat-bin has come. It means that if men would have money, let them go to work and produce something that the world wants. It means production versus speculation, honesty versus trickery, getting out of debt instead of getting into debt; it means business, success, wealth.—[Lawrence Journal.]

TO RENT ON COLLEGE HILL.

Houses, rooms, stoves and bedsteads.
18 Wm. E. GOODNOW.

SHORTHAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

VOCAL MUSIC.

Regular Instruction and Practice in the science and art of Vocal Music, without charge.

H. S. ROBERTS, M. D.

Office south side of Poyntz Avenue, between third and fourth street. Residence corner third and Pierre streets. 16-26

Dr. Patee. 11-20

BOARDING HALL.

I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week. 18-26 A. TODD.

TO COLLEGE STUDENTS.

For the accommodation of students who wish to attend the Agricultural College, I have rooms to rent, in convenient locations, at reasonable figures. L. R. ELLIOTT, 15-19 Manhattan, Kansas.

S. M. FOX,

BOOKSELLER & STATIONER,

Dealer in
Fine Stationery, Envelopes, Blank Books, etc.
Pocket-Books, Gold Pens, 3

THE INDUSTRIALIST.

SATURDAY, AUGUST 21, 1875.

The city schools open Monday.

Mrs. Werden has been sick, but is convalescent.

New or old students desiring information in regard to boarding, will obtain it by applying to Capt. Todd.

The President's office will be found in the north-east room of the dwelling house south of the Barn, ground floor.

Clay Crouse, who was a member of the printing class last year, is now employed on the Oswego Independent.

Old students will remember R. C. Carson, who attended the College last fall term. He is now clerking in his father's clothing store at Joplin, Mo.

Miss Belle Pound intends teaching school this fall. She will preside over the school across the Kansas river in the St. John's district. Success attend her efforts.

The old students are arriving. The latest are Geo. H. Failyer and his two sisters. George's appearance shows that he works just as he studies—as if he meant it.

W. C. Stewart returned Wednesday morning, and is now preparing for business. From what he reports and his healthy appearance we should judge he had enjoyed the vacation.

If new students arrive in town after noon, let them arrange for boarding, etc., and report in chapel on the following morning at 8:30 A. M., Sundays excepted. The examinations for admission are held in the morning.

Jas. M. Graves, who was obliged to leave College last term on account of sickness, has been heard from. He is at Monrovia, Atchison county. He sends word that he has recovered his health; also, that he wants the INDUSTRIALIST.

Mr. Rains expects that the plasterers will begin upon the Mechanical building next Monday, and hopes to have the work finished early in the following week. His contract on that building terminates Sept. 1st, and he will be as good as his word.

As the boarding places of students will be more widely separated than heretofore, the Societies will find the attendance upon their meetings, and, therefore, the interest in the organization, affected by the difference between afternoon and evening sessions. The interests of the College will also be promoted by daylight sessions. As a change, in this respect, of the usage of the Websters will be to their advantage as well as ours, we commend the subject to their attention.

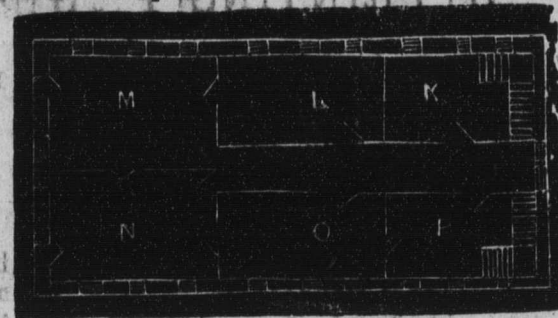
The Fall term opens next Thursday. The first bell will ring at 8:30 A. M., and the second at 9 A. M., at which time all persons desiring admission will present themselves in the chapel. Every student, whether new or old, will fill a blank showing name, post-office address, etc., and the roll will be made out from this data. New students will be examined for the purpose of deciding upon the classes which they can most advantageously enter. Former students who were not present at the final examination of last term, will also be examined. All students will be classified, and the assignment of studies made, on Thursday if possible, so that the classes will be organized and lessons announced on Friday.

The Barn and Mechanical Building.

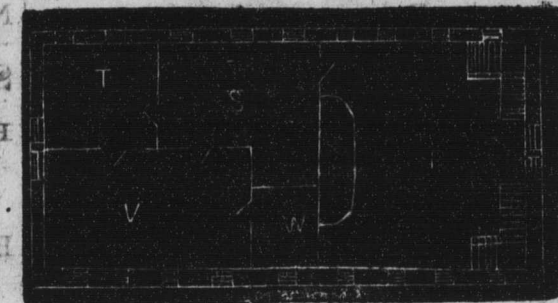
For the information of any interested, and especially for the convenience of the students who will soon want to know the location in the new buildings of the different departments, we again present the following diagrams:

The Barn is a two-storied building 45x95, and will be the headquarters of the literary departments. It is entered from the west end through the hall "J,"

the stairs on either hand leading to the chapel, as shown in the plan.

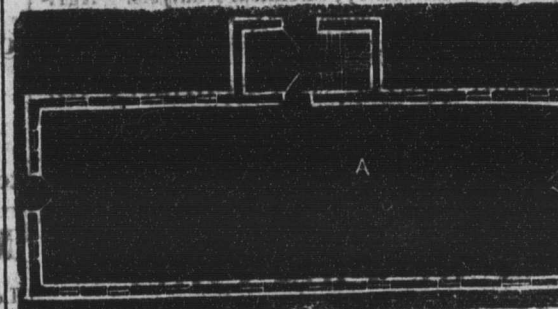


The first room on the right, "K," 17x26 feet, is occupied by the department of Practical Agriculture, Prof. Shelton. In it will also be found the farm office. "L," 17x29, will receive the classes taught by Prof. Platt—department of Elementary English and Mathematics. "M," 21x31, is occupied by the department of Botany and Entomology, Prof. Whitman. The geological cabinet remains in its old quarters on the Hill. In "N," 21x31, the department of Mathematics, Prof. Ward, will be found. The department of Practical Horticulture, Prof. Gale, occupies "O," 17x29. And in the remaining room, 17x26, the Sewing Department, under charge of Mrs. M. E. Cripps, will be found.

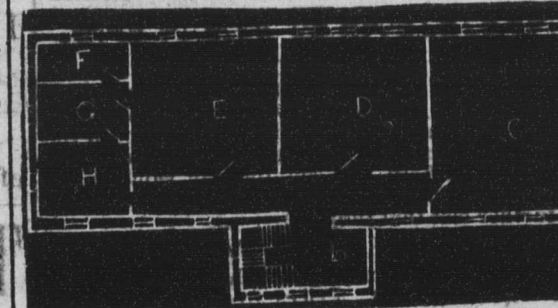


On the second floor, "R" is an assembly room, 42x43; "S," 21x29, the Chemical Lecture Room, Prof. Kedzie; "T," the Physical Laboratory, 21x22; and "V," the Analytical Laboratory, 21x41. "W," 10x16, is the President's room. These latter rooms are not situated as shown on the plan. As you enter the chapel, "S," which leads to all the rooms of the chemical department, is on your left hand, and "W" on the right.

The Mechanical building is 38x102 feet, two-storied, situated south of the Barn, with the vestibule facing east, through which it is entered. The



whole of the lower story, "A," is used by the wood shops, Capt. Todd. It is not plastered, and, until an appropriation can be had, must remain without a floor. The rest of the building is plastered. The second floor is reached by the stairs in the outside, "B."



The Printing Department, A. A. Stewart, will be found in "C," 26x35. The INDUSTRIALIST office will also be here. In "D," 30x32, the elementary classes of the Telegraph Department will be taught, by W. C. Stewart. In "E," 25x30, some branch of

the Woman's Department, under charge of Mrs. Cripps, will be accommodated. The department of Instrumental Music, Mrs. Werden, will occupy the remaining rooms. "H" is 14x15, and "F" and "G" are each 10x15.

The rooms of the old College building on the Hill will be used as convenience may indicate. The assignment can be made more advantageously after the term has begun, and after the boarding places of students are known. The geological cabinet and library occupy their old rooms, and both will be used as needed. The latter will be opened for the distribution of books on regular days; and, as Prof. Ward, the librarian, resides in the house north of the old College, the arrangement will be more convenient than might at first be supposed. The room formerly used as a laboratory will still be used for special analysis. The main office of the telegraph line will occupy one of the rooms; and another room will be used as a work-shop of the Horticultural classes, for grafting, etc. Unless needed for other purposes, the Societies can also have rooms in this building. They will probably find it more convenient, however, to occupy rooms in the Barn or mechanical building. If it is found that many of the students taking instrumental music can be better accommodated in practicing, a piano or organ will be placed in the room formerly occupied by Prof. Lee. In other words, the old building will be used as the best accommodation of the greatest number of the students may indicate.

Boarding.

Persons in Manhattan or on the Hill who are willing to take boarders next term will confer a favor by notifying Capt. A. Todd of the number they can accommodate; whether they wish gentlemen or ladies, or both; whether they will furnish lodging or boarding or both; whether boarding is to include lights, fire and care of room; and the price asked.

Parties having houses or rooms to rent to students or clubs will also please notify Capt. Todd of the fact, stating location, number, size, and price.

Students desiring to obtain rooms or boarding will please address Capt. Todd by mail, or apply to him on arrival.

MONEY AND LANDS.

College lands exempt from taxation for seven years. Railroad lands on eleven years' time at seven per cent interest. Private lands at from \$8.50 to \$5.00 per acre. Improved farms at from \$7.50 to \$20.00 per acre. Money to loan at seven per cent, five years' time, on improved farms. Houses to rent or sell at low figures. For any or all of these, address L. R. Elliott, Manhattan, Kansas. 17

BOARDING.

Mrs. Williston, whose residence is within a convenient distance of the College, will accommodate sixteen boarders. Rooms furnished, including bed and bedding. Board and lodging at the rate of \$3 per week, the student to furnish wood and lights. Gentlemen preferred. 17

HOUSE TO RENT.

Situated near the old college building, containing six rooms. Will rent the whole, or in sets of two rooms each, at the rate of five dollars per month for two rooms. J. E. PLATT.

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Practical, direct and thorough drill in
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Work in Field, with Tape Line, Chain, Compasses, Transit and Level.

The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

ENGLISH LANGUAGE.

The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,
HISTORY OF ENGLISH,
STRUCTURE OF ENGLISH,
STUDY OF WORDS,
AND RHETORIC.

Constant practice in the class room, and, if desired, at the printer's cases.

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Keeps constantly on hand and for sale, specimens of
SHORTHORN, LANCASHIRE,
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AND

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We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

Address, **E. M. SHELTON, Sup't Farm.**

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Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

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First-class Printer.

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THE PRINTING DEPARTMENT

is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer.

Besides regular class instruction in printing, the weekly publication of the Industrialist by the Department furnishes advanced students the requisite drill in newspaper work.

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Special Courses in
KANSAS PRACTICAL AGRICULTURE.

Simple Tillage,
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Stock Breeding,
Mixed Husbandry,
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Constant Drill in Farm Work and in the care of Shorthorn, Devon, Jersey and Galloway Cattle; Berkshire, Essex, Lancashire and Poland China Swine.

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THE most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis. Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry. Photography, Household Chemistry.

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FOR THE

Industrialist!

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The lands of the Kansas State Agricultural College are located in Riley, Clay, Dickinson, Marshall and Washington counties, and comprise some of the choicest tracts in those counties. As these, with one exception, are herd law counties the value of the land for farming purposes is much enhanced; and the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest lands in the market. Prices from \$5.50 to \$10.00 per acre.

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L. R. ELLIOTT,
Agent for sale of College Lands.

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Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

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Special Lectures on

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By Prof. Shelton—the Dairy, Poultry etc.

GARDENING,

By Prof. Gale—vegetable, flower, commercial and ornamental.

HOUSEHOLD CHEMISTRY,

By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation etc.

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DEPARTMENT.

Regular Instruction and Practice in

Carpentry, Cabinet-Making, Turning,

Scroll Sawing, Wagon Making,

Blacksmithing, Painting.

The Department is well equipped with tools and machines for the student's use.

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Loaned on long time, and at LOW RATE OF INTEREST, on first class improved real estate. I can give you money now at hard time prices. Interest **AT SEVEN PER CENT!**

Payable semi-annually. Commissions light. Don't make a loan till you call on

L. R. ELLIOTT,

Manhattan, Kansas.

INSTRUMENTAL MUSIC.

Complete Course in Harmony.

The Piano, Organ and Guitar.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

Vol. 1.

MANHATTAN, KANSAS, SATURDAY, AUGUST 28, 1875.

No. 19.

THE INDUSTRIALIST.

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BY THE
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

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Kansas Fruit and Fruit Culture. No. 5.

BY PROF. E. GALE.

"Where there is a will there is a way." This is well proved in the following from one of our most prosperous farmers. While there may possibly have been something specially favorable in Mr. Polson's location, it is doubtless true that the same faith in good earnest work would have been worth many thousands to Kansas fruit-growers last year. Mr. Polson's ten days of hard work will count up profits possibly in years to come faster than any other ten days of his whole life. It is refreshing to hear the ring of the old faith in Kansas fruit culture. We shall hear it again, louder and clearer than ever, from all parts of the State. The experience of 1875 and, we will add, the experience of 1876 will teach us that fruit culture means work. When we come to count up, in the spring of 1877, the ravages of the borers we shall be more thoroughly convinced that trees need care. The sooner we learn this lesson the better it will be for us:

RANDOLPH, Kas., Aug. 14, 1875.

PROF. E. GALE,

DEAR SIR:—Yours of the 4th inst. is just at hand, having been ten days on the road. I don't know that I have anything to offer that will be of interest or value to you. My trees are in fine condition, and my neighbors seem to think it is luck,—at least that is what some of them call it; I think it was a little work and attention at the right time.

When the grasshoppers came last summer we had some peaches nearly ripe and thought to save them. To do so we tried to protect the orchard by driving them out, but they came in as fast as we could drive; so I selected some half dozen of Hale's early trees, built smudges about them and

kept the smoke up all day, taking care to call up the children and all hands in the evening, when the hoppers commenced settling for the night, and, by going through the orchard and beating trees and ground with brush and broom, drive them all before us over the bluff. This left the orchard almost entirely free of hoppers during the night and early morning, which is the time they do the most damage to trees and foliage as any one will discover if they will only observe them at work after they settle for the night and before they commence flying in the morning. I believe we can afford to board the grasshoppers in our orchards, when we can't help it, but it will ruin any orchard young or old to lodge them for the night. And I believe it is our own fault if they stay with us all night, for in the evening they are as easily driven as a herd of cattle.

I commenced setting my orchard five years ago last spring, and have set some few trees every spring since. I lost one apple tree that had been out two years; laid it to grasshoppers and drouth, but on closer examination I found the borers had completely girdled it, so I charged it to myself. I lost several peach trees that had been planted five years and had borne three crops; every one that died had been previously injured by the cold winters, and some of them had wilted before the hoppers came. I lost some few trees, eight or ten apples and cherries, in my yard about the house, that we were careless with, letting the borers work on them, and not driving the hoppers out of nights. My dwarf pear trees never did grow to do much good; all but one wilted and died last month; suppose caused by blight.

I am very much encouraged with fruit-growing in Kansas, especially apples and peaches. We had some apples last year, and have had peaches for four years although our trees have only been out five. Of course we don't have many peaches this year, but we had a taste of Hale's and will get a dozen or so of seedlings. We had quite a good setting of peaches but the hoppers, native and young ones, ate at them till nearly all fell off.

You want to know how my orchard compares with others on the creek. Mine is growing finely, having made from one to four feet growth to date. I lost one apple tree, girdled by borers. My neighbors lost nearly all their trees, and most of those that have lived are making a sickly growth. Mr. Tryhoffer had fifteen trees, eight or ten years old, large and fine; all dead but one. Young trees all dead. Mr. Neihankie had quite an orchard from two to five years old; he says there are only eight or ten trees living and they are doing no good. My loss in orchard was less than one per cent, while others in the neighborhood lost from sixty-five to one hundred per cent. I believe mine were saved by driving the hoppers out of nights and looking after borers. I find the borers are plenty this year and trees need attention now.

The grasshoppers ate out all the fruit spurs on apples last year and we had no bloom last spring. I find all the trees old enough to bear are making a splendid fruit growth this season, while the younger ones are making larger wood growth. I hope for a good crop of apples, for the trees, next year, considering age, etc.

Respectfully Yours,

GEO. T. POLSON.

Fourteen hundred young Americans are prosecuting their studies in the universities and colleges, music schools and conservatories of Germany.

N. Barber says he kept 1,500 sheep in Missouri last year at a cost of \$1,500, and that during the last winter he wintered the same number near Larned for \$120, a difference of \$1,380 in favor of Kansas.

The census of 1870 shows fourteen American cities that had attained or passed a point of 100,000 population. The census this year, taken in the several States, adds six more, viz: Cleveland, Pittsburgh, Jersey City, Milwaukee, Detroit and Providence, making now twenty cities of 100,000 population or more.—[Commonwealth.]

Dr. Samuel Elliot, head master of the Girls' High School, Boston, thinks that if teachers could be united or represented in a faculty, and allowed to carry out their convictions, they would soon transfer some of the studies of the higher schools to the lower, in a more elementary form; for they know that thousands of children in the lower schools will not pass into the higher, and that what they do not learn where they are will never be learned elsewhere.

A correspondent of the Commercial, in the northwestern portion of the State, calls the attention of those having stock to be wintered, to that portion of the State. He states that thousands of acres of excellent grass can be had for the cutting, and the prospect is that corn will be unusually cheap. The valleys of the Solomon and Republican offer an excellent opportunity to winter cattle. Stock men in these parts will do well to make a note of this.—[Leavenworth Commercial.]

It behooves the farmers of central Kansas to watch most vigilantly the setting out of fires on the prairie. We all know the disastrous results which follow in the path of these fires, and it is not necessary to dwell upon them. The grass this season is making a luxurious growth, as is also all other vegetation. Once a fire gets a start, there is no knowing the extent of its destruction. Farmers should make extra fireguards around their grain-stacks and all combustible improvements. Don't let it go half done and trust to Providence for protection. The surest protection against prairie fires is a wide fire land of plowed ground around the material needing protection.—[Salina Advocate.]

THE INDUSTRIALIST.

SATURDAY, AUGUST 28, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

Tempered Glass.

Our distinguished Massachusetts orator, Wendell Phillips, used to deliver before the literary lyceums of the country a forcible and popular lecture entitled, "Lost Arts." The chief of these arts whose loss he lamented as irreparable was that of the manufacture of elastic glass, by which means it is supposed that at no very remote period in the world's history articles of glass in every-day use were rendered nearly as tough and elastic as steel.

The very recent researches of an eminent French chemist, however, may well soothe our lamentations on this score. For one art lost, we have another art found whose beauty and utility bid fair to revolutionize the processes of glass manufacture the world over. This art can be described by no better term than that of tempering glass. The subject has as yet attracted little attention in this country, but is at present exciting much interest and comment among the Savants of continental Europe.

To M. Alfred de la Bastie, of Lyon, belongs the honor of the very recent startling developments, the result of a very extended course of experiments. The process can not be called a discovery, nor does Bastie claim it as such. It has been long known to frequenters of glass-blowing establishments, that if a little molten glass be dropped from the end of the punt into cold water it instantly solidifies into a pear-shaped drop attached to which is a slender thread-like tail. These have been long known as Prince Rupert's Tears, being popularly attributed to the researches of that old time cavalier. These Rupert's drops may be taken from the water and held in the naked hand while the interior of the mass is still glowing red hot. The exterior cools almost instantaneously, while the interior on account of poor conducting power of glass must cool very slowly. Hence a state of tremendous tension is produced, called somewhat indefinitely a condition of "unstable equilibrium." Now it is from the wonderful properties of these drops that Bastie has taken the key of his whole process. Their hardness is positively startling. They will resist a blow with a hammer without breaking; and yet if the tiniest end of the thread-like tail be quietly pinched off the condition of

unstable equilibrium is instantly destroyed and the whole mass as instantly flies into a minute white powder looking like fine sand. It is this property of the Rupert's drops which has determined the method of producing the French verre trempe, or tempered glass. It is intended to convert every article of glass into the condition of a huge Rupert drop. A bath has been prepared consisting of wax, resin and a variety of oils (its exact composition is maintained a secret) into which the glass articles to be tempered are plunged. The bath is heated to an exceedingly high temperature in an air tight vessel. The glass articles also are heated to just below the melting point and in this condition are passed by machinery into and out of the bath without the admission of air.

Should the articles not be heated to the proper degree they would be instantly shattered into fragments upon reaching the bath. The object is to heat them to as high a degree possible and still retain their form. They will then, when taken from the bath, be found to possess a strength fully fifty times that of ordinary glass. A few experiments will illustrate this remarkable power. A large watch crystal placed upon the floor with its concave surface downward sustained the weight of a heavy man without breaking, though bending under the pressure. Two plates of ordinary and tempered glass were placed side by side and a metallic ball weighing two and a half ounces was dropped upon them from constantly increasing heights. The ordinary glass invariably broke at the fall of three feet, while the tempered glass remained unbroken at a fall of twelve feet, and upon examining its surface it was found indented by the stroke of the ball. This glass seems also utterly insensible to the influence of heat: a plate was thrust into the intense flame of the spirit lamp without effect, and a glass vessel of cold water was placed upon a hot stove and the water raised to the boiling point as safely as in a metallic cup. Finally, a plate of this verre trempe and of strong roofing tile were placed side by side and a five-ounce copper ball dropped upon them at increasing heights. The heavy tile could only sustain the blow from a height of six feet without breaking, while the glass of much less thickness was unbroken by a fall of ten feet.

Nor is this process an expensive one to be employed only in the production of curious luxuries. It is estimated that twenty thousand watch glasses may be thus tempered at a cost of less than five dollars. The immense value of this wonderful process will suggest to every one a host of useful applications. The retorts and beakers of the chemist will lose their brittle and treacherous character. The thrifty housewife will cease to be tortured by the untimely crash

of glass lamps, chimneys, and table-ware. Our windows will have become impervious to any hail storm, or more properly we shall do away with windows and roof our houses with glass, or perhaps to a good extent build them of glass altogether. And when by a shock of sufficient violence any one of these utensils is broken, instead of the sharp and treacherous fragments lacerating the flesh of the unsuspecting wayfarer we shall find, as in the genuine Rupert's drop, which it is, a little heap of white dust which we may sweep up and throw away as harmless as snow.

"As brittle as glass" will then, as an English writer neatly suggests, be a very miserable and old-fashioned sort of a simile; and as to cautioning a man who lives in a glass house about "throwing stones"—if his mansion be of the "tempered" article, he is really the only one among us who can safely indulge in such a pastime.—[Prof. Kedzie.

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Dr. Patee. 11-20

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THE INDUSTRIALIST.

SATURDAY, AUGUST 28, 1875.

Mrs. George Wisner desires two more lady boarders.

Religious services in the College chapel at 3:30 P. M., to-morrow afternoon, by the President.

The INDUSTRIALIST office will be moved into its new quarters in the mechanical building the first of next week.

Neither the Managing Editor nor his associates are responsible for the locals which make their appearance this week.

Only a few of the old students have arrived, but quite a number have engaged boarding and will be on hand in a few days.

Refreshing showers have succeeded the wind and dust which prevailed the first of the week. As a consequence the atmosphere is much cooler.

Mr. Hunting, who resides a short distance southwest of the College, will take three or four more boarders. Price, \$4.00 per week, rooms furnished. Gentlemen preferred.

We ask the indulgence of our readers again this week. The extra labor following the enrollment of so many new students has prevented the editors from giving little or any attention to the paper this week.

We are indebted to Mr. Albert Griffin for the use of some of his brevier in the list of students which appears elsewhere. An office whose resources are not very great knows how to appreciate generous acts of this kind.

The Alpha Beta Literary Society held its first meeting on Friday afternoon, the 27th. A goodly number of members were present, considering the fact that but few old students had arrived. The members were very social and mingled together with the utmost freedom.

The plasterers are busy at work in the mechanical building, and the masons are pointing the walls. Soon the sound of the stone-cutter's hammer and the plasterer's trowel will be succeeded by the click of the telegraph instrument and the printer's types, the noise of the carpenter's saw and the clear ring of the blacksmith's anvil, while the pianos will discourse sweet music to the students in these different departments, cheering and comforting them as they proceed in the study and practice of these various industries.

Proceedings of Alpha Beta Society.

Society called to order by vice-president Miss Gale. Devotion by G. A. Gale. G. H. Failyer appointed secretary pro tem. The names of Chas. Gillett and Miss Esther Evans were proposed and they recommended as suitable persons to become members of the society.

The society elected the following officers: President, F. B. Quimby; Vice-President, Miss Nellie Sawyer; Recording Secretary, A. A. Stewart; Corresponding Secretary, Miss Melva Sikes; Treasurer, G. A. Wake; Marshal, C. N. Russell.

The following directors were elected for the ensuing year: Misses Sawyer and Child, Messrs. Wake, Failyer, Grover, Gale and Stewart.

After the transaction of unimportant business the following temporary committee was appointed to select a question for debate, Messrs. Grover and Gale and Miss Sawyer. The following question was selected, "Should saloons be licensed?" Speakers: Affirmative, C. M. Grover; Misses Nellie Sawyer and Ella Gale; Negative, G. H. Failyer, Miss Ella Child and C. A. Dow.

The vice-president appointed the following persons to the duties here assigned them: Essays, Misses Harper and Whitman; Select Reading, J. S. Griffing; Declamation, C. N. Russell.

The exercise of extemporaneous speaking was

quite extensively participated in, and considerable earnestness was manifested by the speakers.

On motion Miss Child, Miss Harper, and G. A. Gale were appointed a committee to prepare programme.

On motion the following permanent committee was appointed for the selection of questions for debate, G. H. Failyer, C. M. Grover, and A. A. Stewart.

On motion adjourned.

G. H. FAILEYER, Secretary.

Students Already Enrolled.

The following is the list of students applying for admission to the Agricultural College on the first day and a half—the term beginning Thursday and the list closing Friday noon. It numbers 108, which is the highest figure ever reached by this institution on the second day. Many of the old students who have made arrangements for boarding have not yet returned. Over sixty new students were examined the first day, and the grades have not yet been made in all classes. Judging from the present attendance the probabilities are that in spite of grasshoppers the attendance during the coming year will exceed that of any previous year. It is far better than expected:

NAME.	RESIDENCE.
Allen, Edwin.....	Toledo, Chase.
Beals, Sarah R.....	Toledo, Chase.
Boies, Frank.....	Valley Falls, Jefferson.
Brous, Wilber.....	Pottawatomie.
Brown, Mark L.....	Riley.
Browning, Lois.....	Riley.
Campbell, Ettie A.....	Riley.
Child, Ella.....	Riley.
Craig, Addie J.....	Camden, Paint Co., Mo.
Craig, Sarah.....	Camden, Paint Co., Mo.
Crowl, Florence, St. George, Pottawatomie.	
Crowl, Jessie C. St. George, Pottawatomie.	
Damon, Rosa M.....	Manhattan, Riley.
Davidson, W. B.....	Ft. Sill, Indian Ter.
Davidson, Geo. K.....	Ft. Sill, Indian Ter.
Dow, Chas. A.....	Hartford, Coffey.
Eells, Allen B.....	Riley.
Eells, Hattie M.....	Riley.
Elleworth, Miles.....	Effingham, Atchison.
Emmons, G. E. St. George, Pottawatomie.	
Evans, Esther J.....	Plainfield, Illinois.
Failyer, Geo. H.....	Columbus, Cherokee.
Failyer, Marjiam.....	Columbus, Cherokee.
Failyer, Miriam.....	Columbus, Cherokee.
Fay, Chas. W.....	Ogden, Riley.
Flack, Jno. B.....	Enterprise, Dickinson.
Fletcher, Ellen.....	Manhattan, Riley.
Fraunberg, Wm. S.....	Chetopa, Labette.
Fuller, A. P.....	Ottawa, Franklin.
Gale, Ella M.....	Manhattan, Riley.
Gale, Geo. A.....	Manhattan, Riley.
Garrett, Nina.....	Wyandotte, Wyandotte.
Gibbon, Jno. W.....	Burlington, Coffey.
Gillett, Chas.....	Savannah, Pottawatomie.
Gregg, Horace.....	Manhattan, Riley.
Griffing, Wm. J.....	Riley.
Griffing, Jno. S.....	Riley.
Grover, Chas. M.....	America, Nemaha.
Grover, Ella.....	Savannah, Pottawatomie.
Grover, Mary A. Savannah, Pottawatomie.	
Harding, Rowanna B.....	Ashland, Riley.
Harding, Rowena M.....	Ashland, Riley.
Harding, Thos. A.....	Ashland, Riley.
Harper, Josephine C.....	Manhattan, Riley.
Hann, Jno. C.....	Sedgwick, Harvey.
Hodges, D.....	Strawn, Coffey.
Hodges, S. R.....	Strawn, Coffey.
Hoyt, Fred O.....	Hiawatha, Brown.
Hoyt, Kate.....	Manhattan, Riley.
Hurlburt, Alice M.....	Emporia, Lyon.
Huston, Chas. M.....	Junction City, Davis.
Ingraham, Florence.....	Riley.
Kay, Jas. S.....	Oak Grove, Pottawatomie.
Kimball, Carrie.....	Riley.
Kimble, Martha.....	Riley.
Kimble, Mary.....	Riley.
Leasure, Marion F.....	La Cygne, Linn.
Lewis, Ira H.....	Chetopa, Labette.
Mails, Chas.....	Pottawatomie.
Mails, Jennie E.....	Pottawatomie.
McConnell, Chas.....	Manhattan, Riley.
McKelvy, Robert.....	Washington.
Meeker, Julian L.....	Ottawa, Franklin.
Merritt, Arthur.....	Perry, Jefferson.
Metcalf, Holmes P.....	Ottawa, Franklin.
Parkerson, Fannie R.....	Manhattan, Riley.
Parkerson, Freeman.....	Manhattan, Riley.
Parish, Effie.....	Riley.
Parish, Ella.....	Riley.
Parish, Emma.....	Riley.
Parsons, Mildred B.....	Kansas City, Mo.
Patee, Henry.....	Manhattan, Riley.
Peckham, W. H.....	Manhattan, Riley.
Penry, Chas. E.....	Hutchinson, Reno.
Platt, Geo.....	Riley.
Powers, Herbert W.....	Manhattan, Riley.
Rambo, Anna.....	Plymouth, Lyon.
Rambo, Jas. W.....	Plymouth, Lyon.
Redenbaugh, Lydia.....	Lyndon, Osage.
Rodgers, J. W.....	Solomon City, Dickinson.
Rodgers, L. B.....	Solomon City, Dickinson.
Rodgers, Hope L.....	Solomon, Dickinson.
Rodgers, Julia F.....	Burlingame, Osage.
Romick, J. W.....	Solomon, City Dickinson.
Roper, Nida.....	Manhattan, Riley.
Russell, Chas.....	Tierra, New Mexico.
Sawyer, Nellie.....	Ottawa, Franklin.
Schawlin, Jno.....	Burlington, Coffey.
Shaw, James.....	Riley.
Stockwell, Sam'l H.....	America, Nemaha.
Todd, Irving.....	Riley.
Ulrich, Wm.....	Manhattan, Riley.
Wake, Geo. A.....	Manhattan, Riley.
Warner, Cora.....	Ogden, Riley.
Warner, Nannie E.....	Ogden, Riley.
Whitman, Ida G.....	Lyndon, Osage.
Whitman, Minerva E.....	Lyndon, Osage.
Whitney, Kittle S.....	Riley.
Whitney, Genevieve.....	Riley.
Whitney, Willard.....	Riley.
Williston, Carrie.....	Riley.
Williston, Frank H.....	Riley.
Winne, Ella M.....	Riley.
Winne, Jno.....	Riley.
Wisner, Albert.....	Manhattan, Riley.
Wisher, Wm. M.....	Manhattan, Riley.
Wood, Arlie.....	Parsons, Labette.
Wood, Frank W.....	Valley Falls, Jefferson.

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404, out of Duchess 343. Price, \$100.
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The lands of the Kansas State Agricultural Col-
lege are located in Riley, Clay, Dickinson, Marshall
and Washington counties, and comprise some of the
choicest tracts in those counties. As these, with one
exception, are herd law counties the value of the
land for farming purposes is much enhanced; and
the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest
lands in the market. Prices from \$5.50 to \$10.00
per acre.

Terms of Purchase:—One-eighth cash,
and balance in seven equal annual installments,
with annual interest at ten per cent., or any greater
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time of purchase. For further particulars, address

L. R. ELLIOTT,
Agent for sale of College Lands.

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Four miles of line, twenty instru-
ments, and daily instruction and drill, by an
experienced operator, in sending, receiving
and office accounts, reports and book-keep-
ing. No charge, except for blanks, say \$3.
Special course of lectures, by Prof. Kedzie,
on electricity, battery, etc.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

Vol. 1.

MANHATTAN, KANSAS, SATURDAY, SEPTEMBER 4, 1875.

No. 20.

THE INDUSTRIALIST.

Published Every Saturday,
BY THE
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

Terms of Subscription.

SEVENTY-FIVE CENTS per year, postage prepaid.
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rell line of space occupied. Address,
A. A. STEWART, Manhattan, Kansas.

KANSAS EDUCATION.

Viewed From an Industrial Standpoint.

[An Address delivered before the State Teachers' Association, at Topeka, Tuesday evening, August 24, 1875, by J. A. Anderson, President Kansas State Agricultural College.]

The people of Kansas are extensively en-
gaged in the educational business, more
extensively than is generally supposed.

COMMON SCHOOLS.

At the date of the last official report, Dec. 31, 1874, there were 3,543 school houses, situated in 67 counties, and worth, including apparatus, \$4,029,782.73. The national endowment, consisting of the 16th and 36th sections of each township, had created a permanent fund of \$1,120,123.40 invested in securities bearing interest. This fund had been derived from the sale of 355,666 acres of land lying in 37 counties while 688,523 acres remained unsold. Including the quota of the 26 counties which made no report, and estimating all the unsold lands at the average price per acre received last year, they are worth \$4,243,597.29. In this schedule no account is made of those sections which will yet contribute to the permanent fund as new counties shall be organized. Here, then, before any thing is furnished except an endowment, and the mere rooms in which teaching is to be done, before an instructor is employed or a pupil received, the State has an invested capital of \$9,393,503.42.

During the year of 1874 alone, the people paid three quarters of a million of dollars, (\$723,578.63,) to five regiments of teachers (5,043,) who taught the one hundred and thirty-five regiments of pupils (135,598,) enrolled in the public schools. And the total amount expended in the maintenance and conduct of these schools was \$1,638,977.99, more than half of which was raised by direct taxation.

STATE INSTITUTIONS.

In addition, the business embraces three Normal schools, for the education of profes-
sional teachers; an Agricultural College,

for the education of those who engage in farming, the trades, commerce and other industrial arts; and a University, for the education of those preparing for what are termed the "learned" as distinguished from the "industrial" professions.

Of the Normal schools only that at Emporia has an endowment. This consists of 38,400 acres of land given by the State, reported by the Board of Commissioners in 1873 as worth \$250,000.

The Agricultural College has an endowment granted by Congress, of 81,601 acres: of which 47,176 have been sold for \$210,723.03, and 34,425 are offered and taken at an average of \$6.35 per acre, or \$218,598.75,—making the endowment \$429,321.78. The income, now derived from this source is about \$20,000 a year and should ultimately be from \$40,000 to \$50,000 per year.

The University also has a Congressional endowment of 45,886 acres of land, recently appraised by commissioners at an average of \$3.75 per acre or \$172,072.50, which is now on the market.

The aggregate endowment of these institutions is \$851,394.28.

The five institutions have, since their establishment, drawn appropriations from the State as follows:

Concordia.....	\$ 5,312 50
Leavenworth.....	38,574 01
Emporia, excluding land.....	165,930 13—\$209,816 64
Agricultural College.....	119,227 32
University.....	202,655 90
Total.....	\$531,699 86

It does not appear what parts of these appropriations have been invested in permanent improvements, or what amounts have been used in current expenses. The value of buildings, grounds and apparatus is estimated as follows:

Concordia.....	\$10,000
Leavenworth.....	80,000
Emporia.....	80,000—\$170,000 00
Agricultural College.....	95,806 16
University.....	200,000 00
Total.....	\$465,806 16

SUMMARY.

All things considered, the following summary of the capital invested by the people of Kansas in the work of education, is under rather than over the mark:

Endowment:	
State Institutions.....	\$ 851,394 28
Public Schools.....	5,363,720 69—\$6,215,114 97
Buildings and Apparatus:	
State Institutions.....	\$ 465,806 16
Public Schools.....	4,029,782 73—4,495,588 89

Total..... \$10,710,703 86

Expenditure for 1874:	
State Institutions.....	\$ 74,321 00
Public Schools.....	1,638,977 99

Total..... \$1,713,298 99

As an evidence that this annual expenditure is not exceptional, we cite the fact that during the last ten years the following sums have been disbursed for educational work:

Appropriations to State Institutions...	\$ 531,699 86
Public Schools:	
From County Fund.....	\$ 215,038 27—
From State School Fund	1,316,070 68

By direct taxation..... 5,046,670 02—6,577,778 97

Total..... \$7,109,478 83

So that, during the last ten years, Kansas has either invested or expended for education an aggregate capital of

\$17,820,182 69!

These figures may be dry; figures often are. But they mean something; and perhaps the thing meant is not dry. What do they mean? What causes have produced these results?

WHAT THE FIGURES MEAN.

In a bright night the landscape lies silvered, shadowy and dreamy with weird light. If we search for the causes which produce this effect they are found in the rays of the moon, and in the myriad lesser rays from countless stars, placed at numberless points, away back along endless lines. So is it of the truth-forces which have made these dry figures. They come to us from widely separated regions, and from numberless points along the line of centuries. Some of these ideas were found by the Persians, others by the Greeks, others by the Romans. A few were discovered in the dark cloisters of the middle ages. Many, like deep buried ores, were unwittingly mined by Luther and Knox, by Bacon and Newton, in their search after other truths. Of these ideas, while an occasional one measurably retains its original shape, the majority were smelted and beaten into forms of greater utility by the hot revolutions of the 17th century. In these forms they were transported from the old world to the new by many different hands; for Puritan and Cavalier; Baptist, Quaker, and Huguenot; English, Dutch, French, and Scotch-Irish alike served as common carriers. Yet, in the main, all these truths were forged anew by the mighty trip-hammer of the American Revolution on the ringing anvil of 1776.

So that we of to-day are largely indebted for our educational tools and tenets to those heroes, not only of the last century but of the world, who, having framed a Republic, having thrown wide its doors to all nations, and fully realizing that only upon the intelligence of the people could such a superstructure endure, made the noblest provision for the education of the masses the world has seen. Even as far back as 1787, when the Alleghanies bristled with savages as well as pines, Congress provided for the endowment of common schools and universities in states which should afterwards be formed. And ever since, immigration, like the beneficent river which makes the desert to blossom as the rose, in its sweep through the Mississippi basin, in its trend to the lakes, in its dash up the Rocky Mountain slope, bearing upon its breast the press, the pulpit and school, everywhere and always, has found the sagacity of the fathers to have preceded it; and that, in regions they knew not of, with a grand munificence of which they had no just conception, these fathers had lifted far above even its reach sections 16 and 36 for the schools, and also the

15,000 and 30,000 acre grants, for professional and industrial institutions.

Even more are we indebted to the past for those ideas, seemingly rooted in the very nature of the American immigrant, which cause him to place so high an estimate upon education as something that possesses a real worth. He builds the school house before the church, and long before the store is thought of. He guards the school endowment as vigilantly as his homestead, and, indeed, considers it as an integral part of that estate which presently he shall bequeath to his own children. And when designing men, rendered bold by his seeming apathy, have sought to cripple the free school or to divert its fund, his spring has been like the leap of the lion in suddenness and ferocity.

And still more are we of Kansas indebted to the past for that energy and grit by which this State, just entering its teens, in spite of Missouri bowie knives and halts, despite guerrilla raids and confederate artillery, in the face of drouth and famine, in the very teeth of grasshoppered fields, and, still worse, of grasshoppered hearts, has already erected nearly \$5,000,000 worth of educational buildings.

These, gentlemen, are some of the factors which have created the educational capital indicated by the dry figures. And when fairly understood these figures cannot be dry, for they rivet us to a noble past; and, by so doing, grandly empower us for the present. And since we ourselves, and this our day, are but single links in that endless chain with which God binds eternity, they should flash into us something of the fire and sagacity, exhibited by the founders of the Republic, and should inspire us with a determined purpose to evince a practical wisdom that shall be found by coming centuries to be as much greater than theirs, as our opportunities and wealth are greater than theirs.

RESPONSIBILITY OF HANDLING THIS CAPITAL.

But in this search for the original causes which have begotten so goodly a result, we must not overlook the present bearings of the result itself, nor fail to realize the actualness of this capital, its magnitude, its capabilities, the best objects to be gained by its use, and the best methods of gaining these objects. To the people of Kansas, and, especially, to the 10,000 officers and teachers whom the people have constituted their agents in the conduct of the public educational business, these figures have a clearer and stronger meaning than any of those suggested.

QUESTIONS ASKED BY THE FIGURES.

By direct taxation alone, in the year 1874, nearly a million of dollars, \$969,414, was raised for the current expenses of the educational machinery. Who are these tax-payers, and what are their circumstances? Was the levy made on the property of men only, or on that of widows and orphans as well? Does this property lie in the cities only, or does it form the length and breadth of the State? Was it owned by the rich alone as an investment of surplus capital; or by lawyers, doctors and preachers alone; or by men of science and elegant culture alone; or, on the other hand, was the bulk of it owned by farmers and mechanics? Was this tax, in all cases, met out of the profits of a year's labor, or were there thousands of cases in which men and women, laboriously toiling in shop, field or

kitchen for a stinted living, barely squeezed their quota from out the very dregs of poverty?

For what purpose is this tax levied? Simply because the law commands? By no means; for should such become the will of these persons, that law would not retain a year's life. On the other hand, do people pay taxes just for the ecstasy of the operation? The dollar which buys a tax receipt is of exactly the same value as that which buys flour. It is as laboriously earned. And though expended by the State for the common weal, is it to be handled upon different principles from those which govern the expenditure of an individual's dollars? Are the people's agents who manage the State educational business justified in providing one educational article when a better article can be provided at the same cost? Is the course of study followed in the public schools designed to furnish that training which will be of the greatest value to the largest number of pupils? Is the knowledge acquired in these schools that which will be most used by the mass of scholars in after life?

Such questions as these are thundered out by the dry figures. They are not "voices of the past." These characters are not as the fossil imprints of birds that died ages before the advent of man. They are the rightful questionings of parents respecting the best education of their own sons and daughters, which we must stand ready to answer in the settlement of our accounts with the people as principal. Toil is real, money is real, taxes are real, responsibility is real; this whole educational business is not only a business, and, therefore, to be solely governed by the great principles of justice, sagacity and energy, but it is also a terribly real and responsible business—one fraught with financial obligations to tax-payers, with personal obligations to parents, with educational obligations to pupils, with moral obligations to the State, with civic obligations to coming generations of the Republic, in short, with full responsibility to Him who stands back of all these relations, by whom they were created, and to whom, as the great proprietor, we must also fully account.

These and kindred questions are essential parts of the aggregate meaning of the dry figures. On this occasion they are fair questions; first, because they may be rightfully asked by the people of those entrusted with public business, and, second, because they under-run the very foundations of the educational temple. And I beg to assure you that they are presented in no captious spirit, but solely in the hope of attracting the earnest attention of teachers, superintendents, directors and the friends of education to the query: Whether the present system gives to the people the full value it may be made to render?

[CONTINUED NEXT WEEK.]

THE INDUSTRIALIST.

SATURDAY, AUGUST 28, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

In addition to the work of organizing the printing classes, which is enough by itself, Mr. Stewart has this week moved the printing office from Manhattan to its new quarters in the Mechanical building. The general botheration resulting therefrom, and the giving out of our limited font of nonpareil, compels the present arrangement of the paper.

THE Board of Regents stands adjourned to meet Tuesday, Sept. 7th, 1875.

THE Address on Kansas Education is reprinted from the Kansas Farmer, which paper published it in full this week. Our readers will receive the rest in one or two more numbers.

THE farm department has recently imported from the well known breeding establishment of John Snell's Sons, Edmonton, Canada, a pair of Berkshire gilts, the get of imported Lord Liverpool, out of two sows recently imported from England.

A GRADUATE of the printing department of the Agricultural College worked for us last week. He "ended up" five sticks. When we came to read the proof we marked seventy-three mistakes, and then quit as we thought it would pay better to re-set the article than to correct it.—[Abilene Chronicle.]

First: As no person has yet graduated from the printing department, it is impossible that one of its "graduates" could have worked on the Chronicle. Second: No person, who had at any time been a member of any of our printing classes, has ever set a line of type in the Chronicle office; and if Mr. Hart will send us the name of the individual meant we will furnish evidence of the correctness of this assertion. With these slight amendments, the paragraph may be true. Somebody has been stuffing you, Hart.

The farmers of the State are beginning to understand that the College Farm is the place to procure pure bred breeding animals. Certainly we have some advantages in breeding this class of stock that farmers in general do not possess, and which enable us to guarantee everything leaving our yards to be as represented. During the present season a demand has sprung up for pigs of the College breeding altogether beyond our stock. The following extract from a private letter from a farmer in Ellis county shows the estimation in which our stock is held by those purchasing them:

PROF. E. M. SHELTON,

DEAR SIR:—The pigs arrived on Monday, or at least I got them on that day. I am more than satisfied with them and do not see how you can sell them at such prices. (Twenty dollars per pair.—ED.) Hardly \$50 would buy them of me.

Much obliged for your promptness in filling my order. Please notify me when your Berkshires are ready to ship.

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 4, 1875.

An editorial on Fruit Culture, by Prof. Gale, is crowded over until next week.

We are under special obligations to Irving Todd and Wm. S. Fraunberg for extra and timely help.

A refreshing thunder storm on Thursday eve measured one inch and ten hundredths. More of the same kind needed.

The first sermon in the Barn was delivered by the President, August 29th, from the text: "Worship the Lord in the beauty of holiness."

We want every week a report of the proceedings of the College societies, not exceeding two hundred words each. Will they appoint reporters?

Mr. A. W. Rollins, of Manhattan, has purchased of the College the two-year-old, Shorthorn heifer Miss Lee, by Minister 6363, out of Kate Lee, etc.

The usual religious service will be held in the Barn every Sunday, at 3:30 P. M. During the month of September the President will have charge.

If there are printing offices in the lower regions, equipped for torture, the worst of them has more brevity and nonpareil than ours. We will leave it to the first gentleman who dies off the staff of any daily.

The members of the Faculty have had their hands full this week. All are on the ground, and large classes make the hours pass swiftly. The several rooms are answering better than the old ones and are easier of access.

Beginning with our next issue, Prof. Kedzie will furnish regularly to the INDUSTRIALIST a weekly abstract of the meteorological observations of the Chemical Department. This will form a regular feature of the paper and will take the place of the abstracts formerly printed upon postal cards and distributed throughout the State.

Mr. Geo. H. Failyer recently presented to Prof. Kedzie, for the cabinet of his department, a remarkably large and beautiful crystal of Sulphide of Zinc—known among miners as "Black-Jack." The specimen is from the mines of Joplin, Missouri, where large quantities of the ore are mined, hauled across the border into Kansas to obtain the necessary supply of coal, and then smelted into the crude metal.

The first bell rings at 8:00 A. M. and the second at 8:30, when Chapel service is held. The recitations are fifty minutes long, beginning as follows: First, 8:40; Second, 9:30; Third, 10:20; Fourth, 11:10; Fifth, 12:00 M; Sixth, dinner, from 12:50 to 2:00 P. M. The recitations in the industrial departments are chiefly held during the morning at the "off hours" of the pupil's literary recitations, and at such hours in the afternoon as are necessary.

Mistakes happen in printing offices as well as in other places. It was a laughable mistake of the boys at the Kansas State Agricultural College who set up an advertisement so as to announce that the College Farm has Shorthorn, Jersey, and Essex swine, and Lancashire, Berkshire and Devon cattle for sale.—[Western Rural.

The mistake would be quite amusing if it had ever happened—which it never did. It was supposed that the readers of that advertisement would not try to make rail fences of themselves, but follow straight lines. Try it again!

The 129 students in attendance are from thirty counties and states as follows:

Atchison, 1; Brown, 1; Chase, 2; Cherokee, 3; Coffey, 5; Davis, 1; Dickinson, 5; Douglas, 1; Franklin, 4; Jefferson, 3; Harvey, 1; Illinois, 1; Indian Territory, 2; Labette, 3; Linn, 2; Lyon, 3; Marshall, 1; Miami, 1; Missouri, 3; Nemaha, 2; New Mexico, 1; Osage, 6; Pottawatomie, 12; Reno, 1; Riley, 56, of whom 13 are from Manhattan; Saline, 2; Sedgwick, 1; Wabaunsee, 3; Washington, 1; and Wyandotte, 1.

The Evergreen, a sixteen-page monthly, published by George Pinney, at Sturgeon Bay, Wisconsin, is exclusively devoted to the interests of evergreen

and forest-tree culture; and is worth far more than the sixty cents' subscription. We find in it Prof. Gale's article on shelter-belts, and the following:

Prof. E. Gale, of Manhattan, Kans., President of the State Horticultural Society, has placed upon our table a copy of the proceedings of the Society for 1874. It is a volume of nearly 250 pages, largely filled with practical papers and addresses upon a great variety of Horticultural topics. A long paper from Prof. Gale is particularly valuable to the tree-growing interest, also papers upon rain-fall, moisture, evergreens and forest culture show that Kansas is awake to the importance of trees to the country.

Owing to a change of quarters the line offices of the Telegraph Department will be as follows till further notice:

F. C. Jackson's residence,	PR.
G. C. Wilder's residence,	BN.
Kansas Pacific Depot,	MN.
Manhattan City,	W.
Adams House,	WS.
George Wisner's residence,	AW.
Mrs. Jaquith's residence,	P.
Mechanical building,	F.
President's residence,	A.
"	B.
Prof. Platt's residence,	RK.
"	N.
College,	CH.
C. F. Burroughs' residence,	BR.
Boarding House,	BH.

The number of students in attendance is much greater than we expected, in view of the visitation of grasshoppers and of the fact that the present crops, on the average, have only made the farmers of the State even on the last year's losses. One hundred and twenty-nine pupils are on the ground, making thirty-eight more than at this time last year, or twelve more than the whole number enrolled from August to January 1874. Judging from the enquiries and usage, many more will arrive during the coming weeks. Education is regarded as one of the luxuries of life, that is, as something which may be put off until parents feel better able to meet the expense; and when the general financial condition of the State and country is considered, the demand for the practical education here given, as shown by the attendance, is certainly greater than careful estimators would have anticipated.

Mr. Albert Griffin is in the habit of doing sensible and kindly things, and the following is right to the point:

A considerable number of the pupils attending the Agricultural College (both boys and girls) will not be able to remain as long as they desire in consequence of the inability of their parents to long support them away from home. Many of them would like to earn something during their spare hours, and if they could do so would be enabled to remain long enough to secure diplomas. During previous years, a few students have earned nearly enough to defray all their expenses, and we trust that many will be equally successful in the future.

There is a great deal of work to be done in this community, but, unfortunately, those who would like to hire do not know those who wish employment, and vice versa. In consequence, the former are often compelled to employ vicious or shiftless people, although they would much prefer to help deserving young men and women.

To remedy this evil, we suggest that the College authorities designate some one whose duty it shall be to keep a list of all the students, of both sexes, who wish employment; class hours; what they would be willing to do; what wages they would require, etc. Then when any one wants work sawed, work done in the garden, assistance in sewing, house work, etc., etc., they would only have to notify the agent and willing workers would quickly be on hand.

If some such course is adopted we will publish all the notices needed free, and feel satisfied that many of our citizens would make it a point to give the students all the work they could.—[Nationalist.

Mr. W. C. Stewart, Sup't of the Telegraph department boards at the Adams House, where he can be found before or after College hours. During his absence a message left at the depot telegraph office will reach us. At this end of the line, in case there is a demand for such work, we will keep a list of students desiring to perform it, and can deliver notifications received before 8:30 A. M. so that students could attend to jobs in the afternoon.

It remains for the people and the students to say whether they desire such an arrangement.

HOUSE TO RENT.

Situated near the old college building, containing six rooms. Will rent the whole, or in sets of two rooms each, at the rate of five dollars per month for two rooms. J. E. PLATT.

BOARDING.

Mrs. Williston, whose residence is within a convenient distance of the College, will accommodate sixteen boarders. Rooms furnished, including bed and bedding. Board and lodging, at the rate of \$3 per week, the student to furnish wood and lights. Gentlemen preferred. 17

MONEY AND LANDS.

College lands exempt from taxation for seven years. Railroad lands on eleven years' time at seven per cent interest. Private lands at from \$3.50 to \$5.00 per acre. Improved farms at from \$7.50 to \$20.00 per acre. Money to loan at seven per cent, five years' time, on improved farms. Houses to rent or sell at low figures. For any or all of these, address L. R. Elliott, Manhattan, Kansas. 17

SHORT-HAND REPORTING.

Daily instruction by a practical teacher. A new class will be formed August 26, 1875.

TO RENT ON COLLEGE HILL.

Houses, rooms, stoves and bedsteads. 18 Wm. E. GOODNOW.

H. S. ROBERTS, M. D.

Office south side of Poyntz Avenue, between third and fourth street. Residence corner third and Pierre streets. 16-26

Dr. Patee. 11-20

BOARDING HALL.

I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week. 13-26 A. TODD.

TO COLLEGE STUDENTS.

For the accommodation of students who wish to attend the Agricultural College, I have rooms to rent, in convenient locations, at reasonable figures. L. R. ELLIOTT, 15-19 Manhattan, Kansas.

MONEY! MONEY! MONEY!

Loaned on long time, and at LOW RATE OF INTEREST, on first class improved real estate. I can give you money now at hard time prices. Interest AT SEVEN PER CENT!

Payable semi-annually. Commissions light. Don't make a loan till you call on

L. R. ELLIOTT, Manhattan, Kansas. 11

MECHANICAL

DEPARTMENT.

Regular Instruction and Practice in Carpentry, Cabinet-Making, Turning, Scroll Sawing, Wagon Making, Blacksmithing, Painting.

E. B. Purcell, Banker. Jno. W. Webb, Cashier. Geo. S. Green, Attorney.

MANHATTAN BANK,

MANHATTAN, KANSAS.

A General Banking Business Transacted.

Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission. 17

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 4, 1875.

Students Enrolled Since Aug. 26, 1875.

NAMES.	COUNTY.
Allen, Edwin R.	Chase.
Beals, Sarah F.	Chase.
Beckwith, Weldon E.	Wabaunsee.
Boies, Frank	Jefferson.
Brous, Wilber	Pottawatomie.
Brown, Mark L.	Riley.
Browning, Alice M.	Riley.
Browning, Emma E.	Riley.
Browning, Lois	Riley.
Burroughs, Lettie M.	Riley.
Campbell, Ettie A.	Riley.
Child, Ella	Riley.
Conroy, Emma	Riley.
Craig, Addie J.	Paint Co., Mo.
Craig, Sarah	Paint Co., Mo.
Crowl, Florence	Pottawatomie.
Crowl, Jessie C.	Pottawatomie.
Damon, Rosa M.	Riley.
Davidson, Geo. K.	Indian Ter.
Davidson, Wm. B.	Indian Ter.
Dellinger, Jno. F.	Linn.
Dow, Chas. A.	Coffey.
Eells, Allan B.	Riley.
Eells, Hattie M.	Riley.
Ellsworth, Miles	Atchison.
Emmons, Geo. E.	Pottawatomie.
Evans, Esther J.	Plainfield, Ill.
Failyer, Geo. H.	Cherokee.
Failyer, Mariam.	Cherokee.
Failyer, Miriam.	Cherokee.
Fay, Chas. W.	Riley.
Flack, Jno. B.	Dickinson.
Fletcher, Ellen.	Riley.
Fraunberg, Wm. S.	Labette.
Fuller, A. P.	Franklin.
Gale, Ella M.	Riley.
Gale, Geo. A.	Riley.
Garrett, Nina	Wyandotte.
Gibbon, Jno. W.	Coffey.
Gillett, Chas.	Potawatomie.
Griffing, Jno. S.	Riley.
Griffing, Wm. J.	Riley.
Grover, Chas. M.	Nemaha.
Grover, Ella	Pottawatomie.
Grover, Mary A.	Pottawatomie.
Harding, Rowanna	Riley.
Harding, Rowena M.	Riley.
Harding, Thos. A.	Riley.
Harper, Josephine C.	Riley.
Haun, Jno. C.	Harvey.
Hibbard, Alice	Riley.
Hodges, D.	Coffey.
Hodges, S. R.	Coffey.
Houston, Chas. S.	Riley.
Houston, Grant U.	Riley.
Houston, L. N.	Riley.
Hoyt, Fred O.	Brown.
Hoyt, Kate	Riley.
Hurlburt, Alice M.	Lyon.
Huston, Chas. M.	Davis.
Ingraham, Florence	Riley.
Kay, Jas. S.	Pottawatomie.
Kimball, Carrie	Riley.
Kimble, Martha	Riley.

Kimble, Mary	Riley.
Knapp, Frank	Miami.
Leasure, Marion F.	Linn.
Lewis, Ira H.	Labette.
Mails, Chas.	Pottawatomie.
Mails, Jennie E.	Pottawatomie.
Maltby, Jas. C.	Saline.
Maltby, Wm.	Saline.
McConnell, Chas.	Riley.
McKelvy, Robert	Washington.
Meeker, Julian L.	Franklin.
Merritt, Arthur	Jefferson.
Metcalf, Holmes P.	Franklin.
Noyes, Amelia	Wabaunsee.
Parkerson, Fannie R.	Riley.
Parkerson, Freeman	Riley.
Parish, Effie	Riley.
Parish, Ella	Riley.
Parish, Emma	Riley.
Parsons, Mildred B.	Kan. City, Mo.
Patee, Henry	Riley.
Peckham, W. H.	Riley.
Penry, Chas. E.	Reno.
Platt, Geo.	Riley.
Powers, Herbert W.	Riley.
Rambo, Anna	Lyon.
Rambo, Jas. W.	Lyon.
Redenbaugh, Lydia	Osage.
Rhoades, Anna H.	Pottawatomie.
Richmond, Corydon	Sedgwick.
Rodgers, J. W.	Dickinson.
Rodgers, L. B.	Dickinson.
Rodgers, Hope L.	Dickinson.
Rodgers, Julia F.	Osage.
Romick, J. W.	Dickinson.
Roper, Nida	Riley.
Russell, Chas.	Tierra, N. M.
Sawyer, Nellie	Franklin.
Sanford, Lillie	Osage.
Schwalm, Jno.	Coffey.
Shaw, James	Riley.
Sikes, Melva E.	Pottawatomie.
Stockwell, Sam'l H.	Nemaha.
Thompson, Chas. H.	Wabaunsee.
Todd, Irving	Riley.
Ulrich, Wm.	Riley.
Wake, Geo. A.	Riley.
Warner, Cora	Riley.
Warner, Nannie E.	Riley.
Weeks, Abbie C.	Marshall.
Whitman, Ida G.	Osage.
Whitman, Minerva	Osage.
Whitney, Kittie S.	Riley.
Whitney, Genevieve	Riley.
Whitney, George	Douglas.
Whitney, Willard	Riley.
Whitted, Chas. S.	Osage.
Williston, Carrie	Riley.
Williston, Frank H.	Riley.
Winne, Ella M.	Riley.
Winne, Jno.	Riley.
Wisner, Albert	Riley.
Wisner, Wm. M.	Riley.
Wood, Arlie	Labette.
Wood, Frank W.	Jefferson.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

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By Prof. Kedzie—the chemistry of cooking,
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ing and coloring, bleaching, disin-
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Comparative Physiology,
Stock Breeding.
Mixed Husbandry,
Rotation of Crops,
Manures,
Feeding,
Buildings.

185 Acres used by this Department.

Constant Drill in Farm Work and in the
care of Shorthorn, Devon, Jersey and Gal-
loway Cattle; Berkshire, Essex, Lancashire
and Poland China Swine.

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem,
bud, leaf, flower and seed. Careful study of
cereal grains, grasses, and other food-plants;
and of native and foreign weeds.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

Vol. 1.

MANHATTAN, KANSAS, SATURDAY, SEPTEMBER 11, 1875.

No. 21.

THE INDUSTRIALIST.

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BY THE

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OF THE

KANSAS STATE AGRICULTURAL COLLEGE,

MANHATTAN, KANSAS.

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A. A. STEWART, Manhattan, Kansas.

KANSAS EDUCATION.

Viewed From an Industrial Standpoint.

[An Address delivered before the State Teachers' Association, at Topeka, Tuesday evening, August 24, 1875, by J. A. Anderson, President Kansas State Agricultural College.]

[Continued from last week.]

It is clear that the exact worth of the existing system depends upon the real value of the education it furnishes, as will be seen if the yearly transactions be stated as follows:

The Educators of Kansas in account with the People of Kansas:

Dr.
Jan. 1, 1874. To rent of public school buildings and apparatus, worth \$4,029, 782.73, at ten per cent. interest, \$402,978.27
To cash for current expenses, 1,638,979.99
Total, \$2,041,958.26

Cr.
Dec. 31, 1874. By the instruction given during the year to 135,598 pupils estimated at, \$2,041,958.26

The point to be determined is the actual value of this credit. It may be greater or less than the amount claimed.

SUPPOSED BUSINESS MANAGER.

For the purpose of making your own estimate please be so kind as to suppose that you individually held the same relation to the pupils in the common schools which the State holds; that you had furnished the endowment from your personal property, and that, while you were not conducting the business of public education for the purpose of receiving a profitable return in the shape of dollars, you were conducting it for the purpose of receiving the best profit in the shape of the actual value of that mental power, skill and civic ability supposed to be acquired by these pupils from this instruction.

COST OF TEACHING EACH STUDY.

Starting with this credit, "Instruction given during 1874 to 135,598 pupils in the common schools, estimated as worth \$2,041,958.26," you would ask for a statement showing the several branches in which instruction had been given, the nature and

value of the knowledge presented by each branch, and the cost of teaching each. Nor would it be difficult to prepare this estimate, for the five thousand teachers taught an aggregate number of hours; a given percentage of these hours was devoted to each branch; so that the approximate cost of teaching each could be readily determined. You would then want an estimate of the average progress made by the pupils studying each, with their number; and this would bring squarely before you the only difficulty in the problem, namely, that of satisfactorily determining the real worth to the pupils of the knowledge and training obtained by the study of each branch. There are no available data for determining the actual cost of teaching the several studies in Kansas schools. But, solely as an illustration, let us suppose the percentages to be as follows:

Per cent.	Per cent.
Pennmanship..... 5	Geometry..... 5
Reading and simple Grammar..... 10	Physiology..... 5
Advanced Grammar 10	Latin and Greek..... 5
Simple Arithmetic... 10	Drawing..... 2.5
Higher Arithmetic... 10	Constitution U. S.... 2.5
Geography..... 10	Botany..... 2.5
U. S. History..... 10	Physics..... 2.5
Algebra..... 5	Zoology..... 2.5
	Sundries..... 2.5

Total, 100.0

MARKET VALUE OF GEOGRAPHY.

Finding, upon this supposed ratio, that it cost you each year \$204,195.82 to teach geography, you would closely inspect the text book used, for the purpose of deciding the practical worth of its information to the pupil.

Such facts as the proportions and relations of land and water to each other, and to the wants of man; the functions of mountains, basins and plains in the economy of production; and those of rivers, lakes and oceans in transportation, together with the special contributions of different countries to human happiness; the description of your own State, and from that as a starting point, the positions and relations of other States; the general relations, in less detail, of foreign countries with which we deal; and, in no detail whatever, the civic divisions of the globe—these and similar topics might commend themselves as really profitable to the pupils, and, therefore, to you. And yet you would be forced to admit that so far as much of this knowledge was concerned, those pupils who go directly from the school to the farm cannot sell it for a single cent. Employers pay them no more for having it. Hence the real value to them as workmen must rather be, if anywhere, in the "mental discipline" than in the information itself.

But you might find, page after page, of the text book filled with unpronounceable names of insignificant provinces which none of your pupils would ever visit; filled with tabular statements of the lengths of rivers which none of them would ever see; filled with invoices of African capes, past which none of them would ever sail, or, if they should, about which the vessel's chart would furnish more practical information in five minutes than the atlas men ever knew, filled with ponderously stupid conundrums

about the position of Asiatic towns, that are just where the maps say they are not, and in the guessing of which conundrums there is no greater "mental discipline," and far less fun, than there is in a brisk game of "Simon says wiggle-waggle!"

Finding that it cost you over \$100,000 to teach what seems to a practical man mere trash, wouldn't you ask: "Does it pay?" Is the "mental discipline" supposed to be gained worth this sum? Cannot that discipline be given by the study of knowledge that will have a marketable value to the pupil in his work-day life?"

VALUE OF EVERY-DAY-ENGLISH.

Turning again to the abstract, you would notice that it cost you fifteen per cent, or \$306,293.73 to teach reading, writing and simple grammar, and, in addition, ten per cent, \$204,195.82, for higher grammar; or over half a million a year for instruction in the English language. This sum might startle you, especially when you found how few of the pupils could either spell or speak every-day English correctly; and it might strike you that perhaps \$300,000 should furnish thorough instruction in the alphabet, in the formation and meaning of words, in the service performed by the verbs, nouns, etc., of a sentence, in the change of prefix or suffix, in the clearness given to an idea by the use of points; and still furnish that thorough drill by which alone the pupil acquires skill in the use of words as tools. At any rate you would ask what cash profit was given to children under fourteen by the \$200,000 worth of higher grammar. Picking up a text book you might find that, apart from re-stating the valuable elements already learned in the simple grammar, it did not give a single fact or hint that really augmented the skill of these pupils in the art of expressing ideas, and yet this, and only this, is what language is for. The preface would inform you that the author treated of language, not as an art, but as a philosophic science; and would claim that in order to acquire skill in the art one must first master the science. This latter assertion seeming reasonable, you would read page after page, large print and small, of rules that are more numerous than ever rules were before, if "the exception proves the rule," until you found yourself lost in the ramifications of a system more confusing than the ancient labyrinth. And you might conclude that if it be necessary to go through all this in order to speak correctly one's native tongue, the sum of \$200,000 isn't enough—better make it \$200,000,000. But then you would remember that the best way to study any science is under the guidance and inspiration of the practice of its art. Men travel first and make geographies afterwards. Languages were in use centuries before grammars were written; and the most perfect language of antiquity, the Greek, was perfected before its study by the Romans necessitated a grammar.

VALUE OF PIGEON-HOLE ENGLISH.

You would close the book—possibly with the thought that its author was one of those

minutely systematic persons with whom a mysterious Providence occasionally vexes the race; a man whose soul delights in splitting unimportant principles into valueless details; in classifying, sub-classifying, dividing sub-classes, sub-dividing sub-divisions of sub-divided sub-classes. All of which would suggest those classic lines of the poet, so soothing to bitten humanity:

"Big fleas have little fleas, and these have smaller fleas to bite 'em;
These fleas have lesser fleas, and so—ad infinitum."

And your imagination would instinctively depict the author of such a grammar, armed with a breech-loading microscope as big as one of the Great Eastern's boilers, creeping out on the farthest verge of possible sub-analysis, balancing himself on the very tip-end of "infinitum" projected over chaos, and tragically exclaiming to the terrified ghost of a murdered but uncaptured detail:

"Is that a dagger, which I see before me?
Come, let me clutch thee!
I have thee not, and yet—I see thee still!"

I once knew a man of just that sort. He lived in Boston—but there was plenty of room left. He was one of those mental machines made up of pigeon holes tied together with red tape, and covered all over with stiffly written labels underlined with blood-red ink. I don't know who made him. He sported a larger and more multitudinously variegated assortment of canes than any man in Boston. And so exquisite was his polished "culture" that a hair on his head would no more think of crossing the line of another hair than the south pole would think of kinking itself around the north pole. He pronounced "neither" "ny-i-ther," and parted his hair in the middle. That man had his kindling wood sawed and split according to plans and specifications. The sticks were of the same length, of as nearly the same thickness as is possible in free-hand splitting, and devoid of splinters. These sticks were neatly tied with black tape—(contrast,) in bundles of uniform size, which were piled in his cellar lengthwise due east and west—the attraction of the gas pipe on the magnetic needle being calculated. Did his kindling start a fire any quicker or burn any better because of its "systematic arrangement?" And isn't this ability the only real value that kindling possesses? Did all this pay? Could you afford to spend \$200,000 a year for a "systematic arrangement" of fancy English, made upon equally finical principles by detail-hunting hobbyists? And yet many of the grammars are quite as absurd and worthless as the "systematic arrangement" of that kindling wood.

I am glad that a member of this Association is preparing a sensible text-book, and hope he will call it a "Hand-book of the Art of Using English," instead of a Grammar.

But enough has been said to illustrate the mode of determining the practical worth of the several branches found in our schools; and when viewed from the standpoint of work-day life, I, for one, do not believe that any of the scientific text-books therein used are very much better guides to skill in the respective arts than are the grammars.

BUSINESS IS BUSINESS.

In every other business, except that of education, men buy articles because they possess the ability to effect a desired result. When our wives, who usually display sounder sense than their husbands, buy a dress, do they say to the merchant: "Give

me twenty dollars worth of dry goods. I care nothing about the kind, quality, quantity, color, or suitableness to any particular purpose—I want dry goods." Not exactly! Would you say to yourself as business manager: "It makes no difference what sort of an education these pupils receive, or what they will do with it, so long as it is an 'education,' and costs two million dollars a year!" Or would you say to teachers: "Furnish Kansas schools \$200,000 worth of geography, no matter what sort; \$500,000 worth of grammar, the more absurd the better; \$600,000 worth of mathematics, useless preferred; and \$700,000 worth of any fancy sciences or preserved fossils that you have lying around loose!" And yet, either this is precisely what is done in all of the United States to-day, or else another thing is done which from an industrial standpoint is just as absurd.

[CONTINUED NEXT WEEK.]

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 14, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

Fruit Culture.

DEAR SIR:—I have been long of the opinion that fruit culture and tree raising cannot be made profitable in Kansas. I believe it will be better for us to sell now and then a steer or a cow and buy imported fruit from Missouri or Michigan. I have seen hundreds of orchards planted which have come to nothing, even before last year, and the experience of 1874 has served to clinch my former convictions. Shall we accept this as the normal condition of things and abide the consequences?

Yours, &c.,

H. D.

We confess but little sympathy with the honestly held and expressed convictions of our friend. Having watched carefully the progress of fruit culture in Kansas, and having been familiar with the disasters which now and then overtake the fruit interest in every part of our country, just as they can overtake every other farm interest, we are not prepared to accept the position above assumed. Indeed our conclusions are quite the opposite, for we believe that the man who gives intelligent attention to his fruit trees will in the end be abundantly rewarded. And our conclusions are founded not upon a mere hope that fruit culture will be a success, but upon carefully collected facts like the following. It must be remembered that these are reports of young orchards just coming into bearing, none of which can have reached their maximum fertility, and a large part of almost every orchard not yet old enough to bear:

Case first: Thirty acres of orchard; planted from 1864 to 1872; cash value of product in 1873, \$250; cash value of product of 1874, \$200. The product would have been

three times the above if I had planted only those trees which I now know to be the most profitable.

T. R. H.

Case second: Eleven acres of orchard; planted in 1857, 1862, 1868; product of crop in 1873, \$400; product of crop in 1874, \$250. Crop would have been doubled in value by planting only those trees which I now know to be the most profitable.

T. M. P.

Case third: Thirty acres in orchard; planted from 1860 to 1868; cash value of the crop in 1873, \$500; cash value of the crop in 1874, \$3,200. If I had planted only the trees that I now know to be the most profitable, my returns would have been at least three times larger.

W. T.

Case fourth: Twenty acres in orchard; planted in 1866, '67, '68, '69, '70, '71, '72, '73, '74 and '75; cash value of the crop of 1873, \$300; cash value of the crop of 1874, \$400. My returns would have been three times larger if I had planted only those trees which I now know to be most profitable.

D. N. B.

Case fifth: Twenty acres in orchard; planted in 1861 and 1864; cash value of the crop of 1873, \$1,200; cash value of the crop of 1874, \$600. If I had planted only those trees which I now know to be most profitable, the returns from the orchard would have been \$6,000 annually since 1872.

G. C. B.

Case sixth: Three acres in orchard; planted in 1860; product of 1873, nothing; product of 1874, \$200, and would have been \$500 if only those varieties had been planted which I now know to be the most profitable.

J. W. B.

Case seventh: Twenty-five acres in orchard; product of 1874, \$1,200. The product would have been double if only the varieties had been selected which are now known to be most profitable.

W. W.

We have the result of fruit culture on Kansas soil over a range of country extending about one hundred and sixty miles west from the eastern line of this State. These cases have been selected not as remarkable but as fairly indicating what many others with ordinary care have done, and what H. D. might have done if the same thought was given to his trees that he gives to his pigs and calves. We trust that H. D. and others who are ready to give up tree culture will review these cases and ask themselves if they can afford to publish to the world that they have located their families upon lands that "won't grow trees." You can buy a little imported fruit now and then, but you will hardly be able to buy the health-giving power of fresh home-raised fruits, or the humanizing influence of trees, shrubs and flowers upon your family.

You say "accept this as the normal condition of things and abide the consequences." Can you afford this? If you have a farm that won't grow fruit is it hardly worth the taking? Surely its value will be very low in the market. If there is anything that will give a man the shadow of an excuse for going back to his "wife's relations" it must be the consciousness of having wasted five years of life on a claim where fruit cannot be made to grow.—[Prof. Gale.]

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 11, 1875.

Meteorology.

For the week ending Sept. 9th, 1875. Condensed by Prof. Kedzie, for the Industrialist, from the records of the Chemical Department:

DAY OF WEEK.	Sept.	Thermom.		Bar.
		Max.	Av.	
Friday.....	3	85°	72 ⁰¹ / ₃	28.82
Saturday.....	4	89	75 ¹ / ₃	28.79
Sunday.....	5	93	83	28.76
Monday.....	6	94	79	28.84
Tuesday.....	7	95	85	28.79
Wednesday.....	8	97	87	28.70
Thursday.....	9	92	77	28.83

Average Temperature for the week, 79° 80.
Average Barometer for the week, 28.79.

Cash paid for school bonds. Address Prof. E. Gale.

One hundred and thirty-eight students enrolled.

We shall hereafter review in these columns, all books received. The review will be made by the editor in charge of the department to which the subject of the work belongs.

Prof. Kedzie will deliver a lecture, under the auspices of the Alpha Beta Society, in the College Chapel, next Friday evening, the 17th. Subject: "Gunpowder as a Civilizer." Everybody invited.

The following students have arrived this week: Turner C. Hulett, Edgerton, Johnson county; John King, Charles H. Travelute, Marysville, Marshall county; Eva M. Lewis, William H. Sikes, Vienna, Pottawatomie county; Albert McCallum, Charles McCallum, Alida, Davis county; Alphonso R. Ourler, Circleville, Jackson county; Lizzie Riley, Riley county.

Mr. J. F. Conover, of the firm of Conover Bros., music dealers, Kansas City, has made the College several pleasant visits, while delivering to Mr. Samuel Kimble one of Haines Bros' pianos. Doubtless Mr. Conover is satisfied with selling, and without any doubt at all Misses Mary and Martha Kimble are more than satisfied with receiving the aforesaid piano.

In reply to many inquiries, we wish to say that students are received at any time during the term; that the College does not furnish text-books; that no tuition is charged; that boarding ranges from \$2 75 to \$4 00 per week; that students can rent rooms and take care of themselves at \$1 00 per week; and that those who are willing to work can usually find something to do in town and on adjoining farms.

The Executive Committee met on Wednesday and transacted the usual business. The Board of Regents met on Tuesday evening and remained in session until Friday morning. All the members were present. It was one of the most pleasant and effective meetings yet held. President Anderson again presented his resignation as chairman of the Board, which had been declined at the last meeting, and succeeded this time in convincing six obstinate gentlemen that it should be accepted; whereupon, Lieut. Governor Salter was elected chairman of the Board.

The new buildings were examined and the accounts audited. A day was spent in the various recitation rooms, and in a social meeting with members of the Faculty. In short, every branch of the varied business of the Institution was considered, and a deal of good work done. The next meeting will be held Tuesday, Dec. 7th, five o'clock P. M.

New Books.

We are indebted to the courtesy of the publishers, Messrs. Jansen, McClurg & Co., of Chicago, for a copy of "Determinative Tables for the Classification of Minerals found within the United States," by Professor Foye, of Lawrence University, Wisconsin. It is a neat little manual of some forty pages, bound in flexible covers and convenient for the pocket.

The Professor frankly states in his preface that his object "is to furnish tables by which the student may with as few tests as possible determine with precision and classify minerals found in the United States, and to become familiar with their principal characteristics." Everything has been made to subserve this purpose, a very laudable one. In the department of Mineralogy, as in every other branch of natural and physical science, there exists a great class of students to whom the more elaborate works upon Blow-pipe Analysis are neither available nor intelligible.

This little work, condensed from such unimpeachable sources as Von Kobell, Plattner, Elderhorst and others, places in the reach of this class simple and readily comprehended tables for the identification of our more common minerals. When used in connection with some standard manual of mineralogy it can not fail to prove most useful and entertaining to the young worker in this most fascinating branch of study. The book is of course neither adapted to nor intended for advanced or technical instruction in Blow-pipe Analysis, but it is eminently adapted to the needs and desires of the great class of elementary students and amateurs which it is intended to reach. To such it may be safely commended.—[Prof. Kedzie.]

Prof. E. M. Shelton, the present very efficient Farm Superintendent and Professor of Practical Agriculture at the Agricultural College, in a letter, renewing his subscription, says: "There is a great demand throughout the State the present season for pure bred animals, especially swine, and I am surprised that our own and Eastern breeders do not bring their animals more prominently before Kansas farmers, in the enterprising columns of the Farmer."

Exactly what we have told them, Professor. Farmers now getting a dollar fifteen to one dollar and thirty cents for a large surplus crop of wheat have the money with which to buy. Besides, their present extraordinary crop of corn will demand more stock.—[Kansas Farmer.]

Students' Column.

The Alpha Beta Society held its regular meeting yesterday afternoon. A goodly number of members and visitors were present. The following is an abridged report of the meeting:

A committee was appointed to request Prof. Kedzie to lecture before the Society. Committee reported favorably. Prof. Kedzie was then invited to deliver his lecture next Friday evening, Sept. 17th. Invitation accepted. Subject: "Gunpowder as a Civilizer."

Committee appointed to prepare moot-court reported in detail the arrangements which they had made. Report accepted. The court will be held Friday afternoon, 24th inst. Miss Esther Evans is plaintiff in the case and A. A. Stewart, defendant.

On motion a committee was appointed to arrange for music on the evening of the lecture; also a committee to light the chapel and ring the bell on that evening.

Passing from miscellaneous business to the literary exercise the society listened to an Essay by Miss Minnie Whitman; Select Reading by Miss Esther Evans; and a Declamation from A. A. Stewart. The majority of the members engaged in extemporaneous speaking upon various subjects, the prominent one being "The Herd Law." After apportionment of duties for the next meeting, Mr. Wm. Sikes was recommended as a person suitable to become a member of the society. The society then adjourned.

SECRETARY.

The Diagnothean Society met on the 3d inst. In the absence of both president and vice-president the society was called to order by the secretary, Miss A. C. Weeks. The following officers were elected: President, L. B. Rogers; Vice-President, Miss M. B. Parsons; Recording Secretary, Miss E. M. Winne; Corresponding Secretary, W. C. Stewart; Treasurer, Miss Lettie Burroughs; Marshal, Miss Julia Rogers. The following directors were elected: Messrs. Leasure and Stewart, and Miss Weeks. M. F. Leasure was appointed to select a question for debate. Miss Mails was appointed for select reading; W. C. Stewart for declamation; and Miss Rogers for essay.

On motion adjourned.

E. M. WINNE, Secretary.

SCHOOL BONDS

Bought at highest market rates. Address, E. GALE.

HOUSE TO RENT.

Situated near the old college building, containing six rooms. Will rent the whole, or in sets of two rooms each, at the rate of five dollars per month for two rooms. J. E. PLATT.

BOARDING.

Mrs. Williston, whose residence is within a convenient distance of the College, will accommodate sixteen boarders. Rooms furnished, including bed and bedding. Board and lodging at the rate of \$3 per week, the student to furnish wood and lights. Gentlemen preferred. 17

MONEY AND LANDS.

College lands exempt from taxation for seven years. Railroad lands on eleven years' time at seven per cent interest. Private lands at from \$3.50 to \$5.00 per acre. Improved farms at from \$7.50 to \$20.00 per acre. Money to loan at seven per cent, five years' time, on improved farms. Houses to rent or sell at low figures. For any or all of these, address L. R. Elliott, Manhattan, Kansas. 17

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Regular Instruction and Practice in the science and art of Vocal Music, without charge.

Dr. Patee. 11-20

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I will furnish good meals and a room containing a bedstead, chair, table and stove, at the rate of \$2.75 per week. 13-26 A. TODD.

TO COLLEGE STUDENTS.

For the accommodation of students who wish to attend the Agricultural College, I have rooms to rent, in convenient locations, at reasonable figures. L. R. ELLIOTT, 15-19 Manhattan, Kansas.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, SEPTEMBER 18, 1875.

No. 22.

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KANSAS EDUCATION.

Viewed From an Industrial Standpoint.

[An Address delivered before the State Teachers' Association, at Topeka, Tuesday evening, August 24, 1875, by J. A. Anderson, President Kansas State Agricultural College.]

[Continued from last week.]

The term "education" is quite as general as the term "dry goods." Its value depends upon an ability to supply the wants of the user, and therefore it varies in value just as these wants vary. No man pretends that a course of study which best qualifies a pupil for banking, equally, or at all, qualifies another pupil for farming; because the banker prospers by understanding and obeying the laws of exchange, and the farmer those of production—laws which are as different as those of steam and stars. The real worth, therefore, of the instruction given in the public schools depends upon the vocations which the pupils will follow in after life, and upon the use which they will have in these vocations for the knowledge and skill it affords. All admit that the existing course is designed to give pupils that training which is deemed of most value in the work of the learned professions. We received it from the older States; they, from Europe; and no one can deny that the continental universities were and are erected for these professions. So that, in following this example, Kansas necessarily adopted a course of study framed for the direct and express training of pupils preparing for the learned professions, and from which any advantage derived by all other students is indirect and accidental. In every school house from Atchison to Great Bend and from Fort Scott to Beloit, the 135,000 pupils of Kansas, forming a grand orchestra, maintained at the public expense, are playing year after year the opera of the Barber of Seville; and if any of them wish to rehearse the Anvil Chorus or the Song of the Shirt, they must go out of doors and whistle on their own hook. If any one doubts this statement, let him analyze the course of study, and see if there be any

other basis on which he can answer the query: "Why are the branches in their present proportions? Why so much fancy grammar, abstract mathematics, classics and sciences that nobody ever uses except professors in colleges?" He will soon see that either it is directly designed for the professional pupils, or else it never was "designed" for any purpose under the sun.

INDUSTRIAL AND PROFESSIONAL CLASSES.

Now what vocations will the pupils follow as adults? Those which the adults of Kansas now follow. For while it is not true that the son of every farmer will be a farmer, or of every lawyer a lawyer, yet it is true that in an agricultural State the general ratio of vocations remains nearly the same from generation to generation. It is upon the certainty of this law of averages that millions of dollars are profitably invested in life and fire insurance. So that for our purposes the immediate future may safely be judged by the recent past.

In 1870, as shown by the U. S. census, our latest data, Kansas had a population of 364,369. Nearly one-third of these persons were under ten years of age. Of the remaining 258,051, a little less than half, 123,852, were employed in some of the many vocations by which money is gained. Grouping the detailed pursuits under the general headings of agriculture, personal service, manufactures, trade and transportation, and professional, the percentages were as follows: In every 100 persons, fifty-nine, (59.13 per cent,) were engaged in agricultural industries, fifteen (14.63) in manufacturing and mechanical industries, fourteen (13.89) in personal service not otherwise grouped, ten (10.00) in trade and transportation, and less than three (2.85) in what are known as the learned professions. Of this latter group, one (1.13) person in the whole hundred was a teacher; three-quarters (0.73) of a man a doctor; half (0.55) a man a lawyer; and less than half [0.43] a man a preacher.*

While the population has largely increased yet the increase has been chiefly of industrialists, and it is not likely that these ratios have materially changed.

In the face of these facts, can any man prove to the satisfaction of the people of Kansas that a course of study framed for the direct benefit of the professional classes, and only indirectly or not at all for that of the industrial classes, is calculated to give the greatest good to the greatest number of pupils? Are the interests of the ninety-seven scholars to be subordinated to the interests of the three?

Why, gentlemen, in 1870, there were as many butchers and more milliners than preachers; as many shoemakers and more painters than lawyers; more masons and twice as many blacksmiths as doctors; three

*I am one of this class, and stand behind no man in fully estimating the worth of that profession which seeks the truest welfare of humanity. My point is that the professions are able to take care of themselves, and, in doing it, should not absorb the public schools.—J. A. A.

times as many house servants as teachers; and two thousand more carpenters alone than all of these professional classes put together. There were only 3,532 persons in the professions, while there were 21,714 farm laborers—the mass of whom will become farmers, and, in addition, 50,820 farmers, with a total of 73,228 persons engaged in the single industry of agriculture alone.

FIVE HUNDRED TO ONE!

There is still another fact equally startling: For every pupil in the common schools who enters any of the higher educational institutions, one hundred and thirty do not; for every one entering the Normal Schools, two hundred and fifty do not; for every one entering either the Agricultural College or the University, three hundred do not; and for every one who enters the University alone, five hundred do not. In other words, of the 135,000 pupils in these schools, 134,000 never go beyond them.

In the able oration delivered before the University last year, by Capt. George T. Anthony public attention was first called to this subject in Kansas. After citing the statistics of 1873, he says:

As a practical fact, nine-tenths of our children leave school permanently before they are fifteen years old. For every scholar who travels the circle of learning so carefully graded for him, four hundred leave the course before it is fairly entered upon, and go directly out into the world to fight the battle of life, with nothing but a fragment of disjointed educational armor for defense.

Here, then, we must meet the question face to face. Is the course of study in our primary schools, which commences a perfect gradation through the University course, adapted to the wants of the children who leave it, and never even enter the second stage, the High School. I think no one will claim this. I do not believe a sane man or woman would recommend such a course for the four hundred children. These are preparatory courses for a High School, and not preparatory to the condition of citizenship. Now, if this be true, by what right, I ask, is the interest of the four hundred sacrificed to the ambition of the one?

No answer has been made to the orator's question; none can be made.

RECONSTRUCT!

One of two propositions must be true; either this course of study is framed for the direct benefit of the professional classes, or it is not. If it is, then the knowledge taught is not as useful to the farmer as to the lawyer, because the work of the former is as different from that of the latter as plowing from pleading. But if the course is not exclusively for the benefit of the professionalists, then it is filled from first to last with curious and fossilitic information that the industrialist never uses, while it omits, or admits but in fragments, precisely the knowledge which would be profitable to him. In either case it ought to be reconstructed.

CULTURE.

Can any one show that a knowledge of the African capes aids a man in growing corn, or that a knowledge of pigeon-hole grammar increases the yield of his wheat, or of algebra the health of his stock, or of Latin the quality of butter? Let any graduate of our best classical colleges hire out to a farmer, will he receive a dollar more per

[Continued on fourth page.]

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 18, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FIVE copies of the INDUSTRIALIST will be sent for one year, to any address, on the receipt of \$2.50; ten copies on receipt of \$5, with an additional copy free to the person obtaining the subscriptions.

THE Spirit of Arkansas, published at Little Rock, by T. B. Mills & Co., has a free reading room where visitors will find the latest Kansas papers.

WE have received from Mr. Jno. W. Griffin, Leavenworth, western agent of J. H. Butler & Co., publishers, a copy of Butler's Pictorial History of the United States, which will be noticed in due time.

THE citizens of Wyandotte are satisfied that the future metropolis of Kansas may, can and must be at the mouth of the Kaw, and are arranging for a meeting of Kansans on the 23d inst. We acknowledge the receipt of an invitation to be present.

THE Central Kansas Industrial Society will hold its first annual meeting at Salina, October 6—8, 1875. Probably no portion of the State can make a better display this year; and if the rest of the officers are as energetic as Gen. Sup't D. R. Wagstaff, the products will be on exhibition or somebody will know why. Thanks for invitation.

WE learn that the State Agricultural College boasts of having a first-class Amateur Base Ball Club. We want them to come out and show what they can do.—[Topeka Blade.

The College club changes each year, and at present misses several of its old members. When it has had sufficient practice to train the new members and get itself fairly in hand, we doubt not the Blade will be gratified. By the way, we are obliged to the Blade for putting in a daily appearance, even if we are little and only a weekly.

THE Monthly News, Irving Todd editor, is less than one-fourth the size of this paper, and is issued by the News Publishing Co., College Hill. Its workmanship is superior to that of the average amateur sheet; ditto, its editorials. And as the editor, who is also compositor and pressman, is one of the most careful members of our second year printing class, we not only wish the News the best success, but are quite willing to have it compared with the work of the ordinary apprentice who has served the same number of hours. We extract as follows:

The old adage that knowledge is power, is true as ever. Whether power be wielded for good or evil, depends on the factors repre-

senting power. When we consider that the laboring class is so largely in the majority as far as numbers are concerned, the question comes home to every lover of his country, why not educate and elevate this class at least as much as others. Every child and youth of America who is capable of receiving instruction should be required to attend school enough to understand the principles of the government, his duties to his neighbor and society. Schools for the industrial classes must be fostered, and it is a hopeful sign of the times that so much is being done in that direction.

Why should the worker with his hands not do his own thinking? Why should one man be always thinking and another always working?

Kansas Ahead.

No other nation equals this in its genuine respect for woman. In no other country are the substantial rights of woman so frankly conceded or so generally maintained; and in no other is there a more generous disposition to devise and execute measures looking to her greatest freedom, comfort and happiness. The high position she occupies has not been won by her demands; rather, she has been gallantly lifted to it by the noble impulses of a true manhood. And there is nothing which the American is not ready to do for the welfare of the wife and daughter.

Again, the American has the clear-headed faculty of seeing a good thing, and of going for it along the shortest line and in the best way. Fertility of invention, disregard of difficulties and pertinacity in working at an object till obtained, are national qualities.

In view of these facts, is it not singular that, though forty-three in every hundred of our school children are girls, no attention whatever is paid to teaching that kind of knowledge which would be especially valuable to the woman? And is it not more singular that the course of study in female colleges is an exact copy of that course designed for the education of lawyers, with instrumental music and fancy painting attached, like a tail to a kite? Men love their daughters quite as well as they do their sons, and are even more anxious to render them independent, or to place them beyond the smoke and carnage of life's battle. How does it happen, then, that the whole public school system squarely ignores the distinctive claims of woman to a distinctive education? And how long is this ignoring to be continued?

Kansas has no reason to be ashamed of the fact that its Agricultural College is the first institution in the United States to attempt the teaching of knowledge that will be directly valuable to the Kansas woman. The phrase "Domestic Economy" is intended to designate several different branches, and will include special instruction by the Professors of Practical Agriculture, Chemistry, Practical Horticulture and others.

Prof. Shelton is now delivering a course of daily lectures to a large class of young

ladies, advanced students, on those practical topics of Farm Economy with which every woman should be familiar, and especially every farmer's daughter or wife. Whether a woman lives on a farm or not, she will be benefited by a thorough knowledge of the best methods of preparing many farm products, simply because her own interests in after life will be advanced thereby. The chances are ninety-nine in a hundred that every Kansas girl will have more or less to do with house-keeping; and every house-keeper has a good deal more than less to do with the articles furnished by the farm. For example, good butter is rather the exception than the rule; and instruction upon the best practical methods of making it, or, of improving the butter purchased in the market, is worth more to any woman than is the same amount of instruction respecting many topics taught in every school or college.

The house-keeper who should exclude from her larder milk, butter, cheese, poultry, eggs, cured beef and bacon would be apt to have her attention vigorously called to such a mistake. It is easy enough for young Charles Augustus to strike a heroic attitude and vociferate that his Angelina shall have nothing to do with such greasy realities as these; but Charles' father, whose name is John or Jim, and who has earned the fortune Charles expects by hard thinking and harder knocks, knows that the heroic attitude of the young man is burlesque, and his vociferation nonsense. It is also easy for tread-mill educators to pursue their classic lips at the idea of including such topics in a collegiate course; but the fact still remains that, by a natural division of labor as old as the centuries, house-keeping falls to the lot of woman, as plowing does to man, and, therefore, the information which the girl will have daily need of is at least more profitable than that which she will have little or no need of.

Prof. Kedzie will this term deliver to the same class a course of lectures on Household Chemistry, treating of the chemistry of articles of food, such as butter and cheese, bread, tea and coffee; the chemistry of cooking; of the ripening and preparation of fruits, dyeing and coloring, bleaching, disinfectants, and ventilation.

Next term Mrs. Cripps will deliver a course of lectures on cooking and household management; and Prof. Gale one on gardening. Some day or other the Legislature will give an appropriation for building and equipping a dairy, and, also, a kitchen laboratory, just as it has furnished the machines for dress-making and millinery. When it does Kansas will be able to prove to the satisfaction of the other States that they, like Greeley's questioner, will find it to their advantage to "go West" and learn a little common sense about education.

[Continued from first page.]

month because of his classical education? How many professional men are there to-day who would gladly engage in farming, only they don't know enough to farm successfully? No proposition is more capable of proof than that our public schools are not adapted to the wants of the ninety-seven just because they are squarely adapted to the uses of the three. And no amount of talk about "mental culture" as distinguished from mental working ability which commands market rates, can move or weaken these facts. On this point please listen to what, in my opinion, is the best thing ever written on the subject; it is from the pen of Noble L. Prentiss:

But some people say the office of colleges and universities is not to prepare young men and women for the rugged vocations of life, but to impart to them mental culture. Culture is good; but the question arises, What is the best culture? A man might take a quarter section of raw prairie, break it, harrow it and finally seed it down to marigolds; and that would be culture. The result would be beautiful. A thing of beauty and a joy, till frost comes, would be that field of marigolds. What eye would not kindle when "Joond" day stood tiptoe on the misty mountain tops, pointing with rosy fingers to those one hundred and sixty acres of glowing, golden marigolds? But the man owning the adjoining quarter breaks up the prairie sod and puts the entire tract in onions and that would be culture, too. The onion is not an aristocratic vegetable; it is not admitted into good society. When the opera house is a blaze of light; when the wealth of empires glitters in diamonds on necks of snow; when the echoes of delicious music fill the high hall, and the vast drop curtain as it falls trembles responsive to the applause that swells from parquet, boxes and galleries, no admirer ever throws at the feet of the child of genius, the embodiment of beauty and melody, a dewy bouquet of fresh-culled onions. And yet, to return to the kind of culture on the prairie, public sentiment, leaning over the rail fence and commenting on the two quarter sections, goes with the raiser of onions; applauds the thoroughness of his culture; remarks the admirable condition of the ground and the absence of weeds; and the man of onions goes down to his house justified rather than the other. I confess that I am a partisan as between marigolds and onions. I am an ultra onion man, myself.

[CONTINUED NEXT WEEK.]

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A new course can be constructed which would be directly valuable to the ninety-seven, because it would contain that knowledge and tend to impart that skill which they use in after life. Permit just a hint of what I mean.

THE FOUR NATURAL LANGUAGES.

There are four natural languages, or modes of communicating ideas: The first is that of gesture. By it some ideas can better be expressed than by words. The babe uses it, without previous instruction. The maiden's cheek flushes under an admiring gaze, without previous training. A better teacher than man has given every person all the skill ever employed in the industrial vocations. The only classes who are supposed to require instruction in this language are preachers, lawyers, politicians and actors, all of the professional group.

The second language is that of spoken or written words, and all need skill in it, because all need to express their own ideas and to understand the ideas of others. But the several classes do not need vocabularies of equal fullness. Does the carpenter use the same terms as the lawyer? He has a vocabulary of his own, quite as perfect for his use as that of the lawyer for legal use. There is not a professional man present who can understand a conversation between two locomotive engineers on the merits of their engines. And as to doctors, notwithstanding their oracular gravity, nobody pretends to believe that they even understand each other. So that there is a professional and an industrial language. And on both sides there are extremes of dialect. Now, is the every-day language used by the industrial classes Latin, Greek or Hebrew? Not to any alarming extent! What is the sense, then, in forcing these professional dialects on them in the schools? Will printers give

classical names to spaces, shooting-sticks or the profane box? Will carpenters recast their technology? More industrialists use under than over 2,000 words, and yet with these they express exact ideas clearly. Where is the necessity then for pile-driving the ninety-seven with the classical technology of the three? And if there be any, is the free school to furnish the steam for your pile-driving? Where are correctness in spelling and skill in the art of using every-day English to be acquired by the 134,000 out of the 135,000?

The third natural language is that of reckoning. You cannot strike a trial balance kept in words; you need figures. What use do the industrial classes make of these—the 73,000 farmers for example? Do they go beyond book-keeping? Do they employ equations? Why not? Because they have no use for them. Did any body, outside of school, ever care a straw whether that first courier overtook the second courier—especially as he might have broken his neck after he started—as he ought to have done? Professional gentlemen are, in the main, the only ones who use the pure mathematics, and yet from bottom to top our books are built on the pure line; if you doubt it, compare the hand-book of a carpenter, mason or accountant with your higher arithmetics, algebras and geometries.

The fourth natural language is that of lines. By it ideas are expressed which can not be communicated by either of the others. Professional men rarely use it; therefore it is so little taught in our schools. But to the carpenter, blacksmith, shoemaker, tailor, dress-maker, mason, sign painter and engraver, it is invaluable. While to the farmer it is practically worth more than algebraic arithmetic. The industrial classes use drawing five times as much as the professional classes use abstract mathematics. Why not reverse the proportions, then, and substitute accuracy in reckoning, book-keeping and industrial drawing, free-hand as well as geometrical, for the present mathematics?

These then are the languages which men use, and it is easy to see the proportions of their use by and, therefore, their worth to the industrialist.

They ought to be taught as arts, not sciences, because these classes practice the art. For there is precisely the difference between an art and a science that there is between a just graduated medical student and a skillful physician.

KNOWLEDGE SPECIALLY VALUABLE.

Next come the special departments of knowledge most valuable to these pupils as adults.

Sixty per cent will be farmers, who make their living by raising grain. Why not teach them the habits and structure of the plants they handle?

I don't mean the science of Botany, if thereby is intended another lot of pigeon-holes with Latin and Greek labels, stuffed with the names of all the known plants of Europe, Asia, Africa and the geologic

periods, interspersed with dissertations on the flora of Eden. But I do mean that knowledge which makes a farmer more successful in raising Kansas crops, taught as an art.

Inseparably connected with this branch would be the practical facts of physics, or light, heat and moisture as valuable in plant and animal growth; and also those of physiology, cattle-ology, bug-ology, butter-ology, yet not an ology of the lot being taught as a science, but as a practical art.

In the same way instruction should be given in the art of wealth, which would necessarily include that of morals.

WOMAN IGNORED.

Again: Forty-two per cent of the people of Kansas are females; and from first to last our system wholly ignores them. Have they no use for knowledge, in girlhood, womanhood, wifehood? Is there nothing the cook or housekeeper would be better for knowing; no information that would help the milliner or printer to earn a livelihood easier? Is it more difficult to teach the laws of health or household economy than the principles of grammar or algebra?

VALUE OF A PRACTICAL COURSE.

But enough has been said to illustrate what is meant; and I have but two remarks to make concerning such a course:

First: That it would have a greater practical value for the three professional pupils than the present one; because, since the great bulk of professional practice is furnished by the industrial classes, and must necessarily regard industrial habits and rules, this practice would be more successfully managed, if professional men had greater industrial knowledge. Sixty per cent of Kansas law cases, congregations and pupils are furnished by Kansas farmers. Would not the pews be better filled, and the cases and schools be better handled if professional men could speak as wisely of plants as of stars, and could imitate the tact and example of Him who addressed the farmers, not of Palestine only, but of the centuries, in the words: "Consider the lilies of the field, how they grow?"

The second remark is this: If the branches of such a course were really proportioned in the ratio of their use by the industrial classes, is it not clear that by the study of these branches, the mental faculties of the industrialists would be exercised, practiced, "disciplined," just in the degree that the industrial vocations require mental power? Is it not clear that a course precisely adapted to a lawyer's work will best develop the faculties which he most uses? Suppose these to be the logical faculties, and that the stone-cutter or dress-maker most uses the perceptive faculties. Will not, then, a course precisely adapted to their work best develop the faculties by the use of which their living is earned? Perhaps it might be well, at least so far as the common schools are concerned, for the friends of the three professional pupils to give the friends of the ninety-seven industrial pupils a gentle rest respecting the superlative glory

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 25, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Kansas City Exposition.

Kansas City unquestionably possesses great advantages for the creation of an Industrial Exhibition, such as was held there last week. That it also labors under great disadvantages in attempting to shoulder an Agricultural Exhibition, was glaringly apparent at the last meeting. After you have mentioned railroad facilities, enterprising business men and hotels, you have said pretty much all that can be said in favor of holding an exhibition at Kansas City. The disadvantages under which it labors are briefly these: The country within a radius of fifteen or twenty miles of Kansas City is by no means remarkable for its general agriculture and stock-raising, or Horticulture; but it is the fact that Kansas City located mainly in Missouri, but largely identified with Kansas interests, and hence unable to claim the support of the people of either State, except in a cold-blooded mercenary way, that explains whatever of failure attaches to the late show.

As I have before intimated, the disadvantages of Kansas City for the location of this exhibition were plainly seen in the general display; there was comparatively little to be seen of the work of common farmers and farmers' wives. The display was very largely the work of professionals; men who first put their things in "show condition," and then make the round of the fairs.

Take the live stock for example. In many of the departments of this division the show was especially weak. Neither Ayrshires, Devons, Galloways or Herefords were represented on the grounds, and of Jerseys a solitary bull was all I found, although I was told that a considerable herd was on exhibition the day previous. Of Shorthorns there was a very fair show, made mostly by Messrs. Houston and Duncan, of Illinois, who with nice little herds were making the round of the St. Joe, Kansas City and St. Louis fairs. I was pleased to notice in Mr. Duncan's herd a beautiful red two-year-old heifer, half sister to Grace Young 4th, belonging to the College, wearing the blue ribbon won at the St. Joe fair. A few of these Shorthorns deserve special mention both for breeding and quality, notably imported British Baron, a massive roan weighing 2,700 pounds; the 7th and 10th Louan, of Glen Flora; and Miss Wiley, of Woodlawn.

Among the swine a similar condition of things existed. Neither Essex, Suffolks, nor Lancashires were on exhibition. There were a very few Chester Whites and Poland Chinas, and an immense display of Berk-

shires, exhibited by Illinois and Missouri breeders chiefly.

In the sheep department there was a better display, nearly all of the better known breeds of fine and coarse wool and mutton breeds being represented. Mr. Archer, of Kansas City, alone exhibited fifty head of merinoes, among which I noticed some magnificent specimens.

Of the display of fruit and vegetables I have only a word to say. The quantity and quality of the vegetables shown were quite remarkable, while of fruit the display was altogether meager. I was pleased to notice, however, that our western people still lift their heads. Upon the labels attached to several fine plates of peaches, I saw after the name of the peach "stumps the world" conspicuously written. I could not help reflecting that it must afford this honest gentleman a deal of satisfaction to know that all the world draws back in dismay at the mention of his skill. I noticed some other little peculiarities in the language of Missourians, thus stock is pronounced stawk, and hog I found was universally broadened and deepened to hawg.

But whatever may be said of the other departments, no one questioned the superior attractions of the "Agricultural Trot." Indeed "from early dawn till dewy eve" the grand stand was thronged with the anxious admirers of fast horse flesh, and the melodious voice of the pool-seller was constantly heard. Of the audience which surrounded this latter character, I was somewhat curious, and I was at some pains in examining it so far as externals are concerned. I found that while there was a liberal sprinkling of the professional class, who carried the usual marks, the bulk of the audience consisted of young farmers, mechanics and clerks. The truth is it is not the professionals, but the workingmen, farmers, artisans and clerks who are responsible for the presence of these disgraceful proceedings at our exhibitions. I have often heard the managers of these shows blamed without stint for permitting horse-racing and attendant evils upon their grounds. Now these men are simply the agents of the people. If the people will throng the grand stand, and the pool-seller's auction, and give their money and presence to shows of this kind, there will always be found men to furnish the "little trot." The way to "head off" exhibitions of this kind is to stay away from them, make them unpopular. Confine horse-racing and pool-selling for a single year to the "short hairs" and we should never hear of them again.

The majority of the people who attend these fairs go not to learn but to have a holiday, and even the few who attend for the information they can obtain are quite as likely to be deceived as enlightened. The machinery is dressed in a gaudy suit of

paint, and the glib-tongued agent is careful only to point out excellencies and conceal defects; the cattle are all in "show condition," rubbed, curried and polished out of all resemblance to nature. So with the vegetables and fruits; the aim is to furnish monstrosities, not normal specimens or good averages.

On the whole, I cannot but think that these shows cost a great deal for the little good they do, and a higher civilization will demand their discontinuance just as the present age has discarded bull fights and bear baitings.—[Prof. Shelton.]

HON. Alfred Gray estimates that there will be raised in Kansas for the year 1875: 76,000,000 bushels of corn, on an acreage of 1,900,000 acres. He estimates that 59,000,000 bushels of this will be for export. He also estimates a yield of fourteen or fifteen million bushels of wheat, of which about nine million bushels will be for export. The surplus corn will make 165,280 car loads; the surplus wheat, 30,000 car loads. Mr. Gray estimates of oats and other grain about 16,000 car loads; making in all 225,000 car loads, or 714 cars for each and every day in the week throughout the year.—[Atchison Champion.]

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OF THE
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A. A. Stewart, Sec'y. F. B. QUIMBY, Pres.

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Agent for sale of College Lands.

THE INDUSTRIALIST.

SATURDAY, SEPTEMBER 25, 1875.

Meteorology.

For the week ending Sept. 23, 1875. Condensed by Prof. Kedzie, for the Industrialist, from the records of the Chemical Department:

DAY OF WEEK.	Thermometer.			Bar.	Rainfall in in's.
	Max	Min.	Me'n	M'n H't.	
Friday.....	62°	44°	53°	28.97	
Saturday.....	73	40	56	28.74	
Sunday.....	61	43	52	28.81	
Monday.....	60	35	49	29.01	
Tuesday.....	61	33	49	29.09	
Wednesday.....	63	34	49	29.00	
Thursday.....	63	45	53	28.90	

Average Temperature for the week, 52° 09.
Range of temperature for the week, 40°.
Average Barometer for the week, 28.93.
Per cent of cloudiness for the week, 48.
First frost on the morning of Sept. 18th.

Don't forget the Manhattan fair next week.

Sept. 23d.—One hundred and forty-six students enrolled.

The proceedings of the Webster Society are unavoidably crowded over until next week.

Mr. Joyce, of the Leavenworth Commercial staff, gave us a very pleasant forenoon this week in examining the workings of the College.

Most of the delegates to the State Temperance Convention visited the College. Mr. Beach, editor of the Sentinel, was the last but not the least, and, owing to the hurriedness of his call, promised to come again.

Queer.

Every semi-occasionally the uniqueness of this Institution strikes even our stolidity a quick blow that makes one wonder at the whole performance. And this is more frequently the case since the removal of the various industrials to the Mechanical Building. Before, they were scattered in different buildings; now they are side by side and can be seen in five minutes. In the literary departments there are only two things that would lead the ordinary collegian to suspect that he was not in the usual classical college.

The first is the practical drift of all the recitations. In the English rooms the classes are drilled more in every-day English, and less in the blue ethereal of celestial poetry, than is customary. In the mathematical rooms the problems are rather those of the farm, shop and store than of the astronomical observatory or author's study. The book-keeping and industrial drawing have a decidedly more practical trend than calculus or water-colored "art." In the botanical and entomological room plants and insects are considered with reference to their usefulness, rather than as pre-adamitic curiosities. In the chemical and physical laboratories the practice in the use of the apparatus prepares pupils for such applications of the facts of these sciences as may be expedient in their subsequent lives.

But the thing which puzzles the old collegian the most is found in the rooms of Practical Agriculture and Practical Horticulture. Instruction in the art of farming instead of the art of Greek poetry seems queer to him. Studying Shorthorns, Devons and Jerseys; discussing Berkshires and Essex; debating the merits of different kinds of plows and the best modes of plowing, somehow seem singular to him in a college. And when he hears another class going through Horticulture, varieties, grafting, marketing, etc., or vegetable gardening for profit, or landscape gardening on common sense principles, he strongly inclines to the suspicion that there is more attention paid in this Institution to the training of farmers than of lawyers, which naturally raises a doubt whether it is at all proper for an industrial college to attempt to give an industrial education without going over exactly the same studies, in precisely the same way, that professional

colleges have used for centuries in giving a professional education.

An hour with a class of young ladies who are studying the best methods of making butter, cheese, etc., is apt to convince him that, whatever may be his doubts, the authorities of this Institution are decidedly free from similar ones, and are driving ahead just as if they thought they knew what they were about, being, in fact, appointed or employed with the express understanding that they shall know what they are about!

But when the visitor sees the pupils interchanging industrial with the literary recitations, his old ideas are apt to give way a little for the admission of new ones.

In the carpenter shop he finds young men whom he first noticed in a recitation of Botany or Chemistry, "reciting" carpentry with a jack plane or rip saw, just as steadily, interestedly and profitably as they recited the others. Each has his own bench and tools, and the recitation of each is graded precisely as in the literary departments. Some are making tables, others wheel-barrows, another is at the turning lathe, and, in the same long room, young ladies are at the scroll-saw making brackets.

Up stairs, in a large printing office, the study of printing is going on in the same practical way. Some are learning the boxes, others setting reprint, and still others are at work on perhaps this manuscript, or running the INDUSTRIALIST through the press, or getting out a circular for the Loan Commissioner stating that he is buying school bonds at the highest market rates.

In the next room, what seem to be several classes are clicking away on telegraph instruments, or sending and receiving messages, or vigorously calling for a down-town office.

In the next room, the sewing machines, patterns, tapes, drawing boards and scissors make one think that by some mistake he has gotten into the workshop of a dress-making establishment. Such is the fact, but there is no mistake. It is business and means business right along—only the girls are studying dress-making instead of working for the profit of an employer.

In the next rooms are the pianos, guitars and organ, which bring one back to "female college" memories once more, and which suggest the fact that there is nothing in the Constitution of the United States or the laws of Kansas preventing the industrial classes from having all the enjoyment and "accomplishments" that have been conceded to the butterfly classes.

But, as we said at the outset, every now and then the unusualness and queerness of the whole thing comes over us like a gust of cold air in a hot day. It is so unlike the "college" life with which most are familiar. As a boy we would have seized upon such opportunities with the same avidity that we did on games of foot-ball and a chance for a serenading party. As a man, the practical benefit which such an education as this will be to the one hundred and forty-six students now present, when they are called to the discharge of the stern duties of real life, seems every day to be greater—and we wish we "were a boy again," just to substitute its thorough drill for that blessed old drill in Horace and Plato, bird-track geology and "abstract" mathematics. It is a good plan to "educate" a boy so that when he becomes a man, and is thrown from the commencement platform into real life, like a kitten from a table, he can "fall on his feet." It is easier for him to stop that way than on his back, and he can start on the hunt of new quarters sooner.

MARRIED.

PEARCE—STEWART—At the residence of the bride's father, in Neosho, Newton Co., Mo., on Wednesday, Sept. 15th, 1875, by Rev. Smith, MR. GEORGE PEARCE, of Burlington, Coffey Co., Kansas, and MISS SARAH C. STEWART.

The bride is a sister to Mr. A. A. Stewart, Sup't of the Printing Department of this College. She has the good wishes of her brother that she may be happy in her new home in Kansas, and that by this union her voyage through the changing scenes of life may be made more pleasant and prosperous.

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[Concluded from first page.]

of the classics and abstract mathematics as means of "mental discipline."

STATE INSTITUTIONS.

Because of the character of the views presented it is proper that I should say, as I most heartily do, that the same principle which has guided these views in regard to the schools, would logically cause me to follow inclination as well as judgment in every effort to have the University made the best institution and furnished with the best appliances for giving the best professional education which money could provide or brain devise. And so, also, of the Normal Schools. Each of the State institutions has its own field, each should be fully equipped for its own work, and each vigorously attend to its own business.

CONCLUSION.

Such is the aspect, frankly stated, which the educational business of Kansas presents to one viewing it from the standpoint of the rights, necessities and welfare of the industrial classes. So different is this point from that of the professional classes, that to many these views must appear radical if not ferociously wild. It is not the first time, nor will it be the last, that men have honestly differed about the same subject. I have not expected that such views would meet your assent; for, if the facts stated are true, if the deductions drawn are fair, if the principles indicated are those which should really control the educational business of Kansas, then not only are the conclusions radical, but also revolutionary. Their adoption would virtually drive out nine-tenths of the present studies by making new ones prominent. If adopted they would necessarily convert the public schools into industrial schools, rather than, as now, schools preparatory to the professions; and this would be the inevitable result just because these schools were primarily designed for the especial benefit of the masses, were endowed for the masses, are supported by the masses, ought, under the rule of majorities, to minister to the wants of the masses—and the masses are industrialists.

WHAT BUSINESS MEN WOULD DO.

I only ask that you will think the whole problem through from the chair of the supposed business manager; looking for yourself, deciding for yourself, acting on your own judgment. It matters not what your professional sympathies may be, nor what the bias unconsciously received with your classical education, nor what the power exerted by the unbroken phalanx of the grand old States of the Union, nor what the genuineness of your personal belief that the learned professions are the nobler of the vocations, nor what the inertia of the conservative masses, who, not having examined the subject, fail to realize that there are as great differences between the values of educations as of horses; it matters not how great may be the difficulty of striking out new lines, of devising new methods, of creating new agencies—with a full appreciation of all these, I put it to you as wise men, as experienced educators, as those confidently entrusted with the annual expenditure of so great a sum, as worthy of trust because courageous and enduring in the execution of trust, whether, if you as an educational dealer were buying a stock worth \$2,000,000, you would select it with reference to the use made of its articles by the three and not by the ninety-seven of your customers; and, whether, when acting as an

agent you would do that which you would not do if acting for yourself, or fail to do that which you would do if the money were your own? And I know that with you it makes no difference because the damage inflicted by the present system falls, not upon your shoulders, as agent, not upon the professional classes, but upon the farmer, the mechanic, the clerk, and that appealing host of helpless, toiling, loving, down-cast yet struggling class of girls, wives and widows who must earn by industrial labor, if at all, the bread which saves them from the brothel.

WHAT THE PEOPLE WILL DO.

These principles mean educational war; and the war with long established public sentiment will be slow, desperate and hurtling with reputational risk; it promises ten Bull Runs for each Vicksburgh or Gettysburgh; yet, nevertheless, probably after our day, it will finally have its Appomattox; because, when the people have realized that the course of study is to the common schools what the rudder is to the steamer, when they have realized how directly the present course is designed for the benefit of the professional classes, and when the industrial masses have become satisfied that a course ensuring an education directly valuable in their vocations is possible and practicable, when that day comes to Kansas, all the opposition arising from a consciousness that the knowledge and experience acquired by years of professional teaching are endangered; all the man-millinery of "culture," all the owlish pomp and contemptuous sniffs from the sky-curved nostrils of such Quixotic scientists as those represented by the American Association which has just expended its only thousand dollars, given for the advancement of American science, in a monograph to contain "What is Known About Fossil Butterflies!"—the whole of these elements cannot finally prevent, though they may delay, the lifting of the peoples' common schools from the line which leads to professional power, over to that other, kindlier, better line which shall yet more grandly lead to industrial knowledge, industrial skill, industrial power, wealth, happiness—for the people are INDUSTRIALISTS!

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, OCTOBER 2, 1875.

No. 24.

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BY THE

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OF THE

KANSAS STATE AGRICULTURAL COLLEGE,

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A. A. STEWART, Manhattan, Kansas.

Boiled Down.

Humboldt is building a paper-mill.

An ingratin car-pet—A polite conductor.

The political kettle is beginning to sizzle.

Bourbon county rejoices in splendid crops.

How to find a girl out. Call when she isn't in!

Shawnee county wants the herd law. Sensible.

Emporia has a squash seven feet in circumference.

Prairie fires on the rampage. Plow a fire guard!

Wellington offers a bonus of \$4,000 for a \$15,000 mill.

Emporia received four car loads of kerosene last month.

England will buy 88,000,000 bushels of wheat this season.

Cowley county groans under a ninety-seven pound squash.

An Allen county farmer markets 1,800 bushels of peaches.

"Any letters for Mike How?" "No letters for anybody's cow."

McPherson county has two thousand tons broom corn worth \$500,000.

Population of Iowa is 1,352,531, an increase of only 101,198 in two years.

Thirty bushels of wheat to the acre seems to be the rule in Sumner county.

Marysville News has a stalk of corn with twenty-two well developed ears.

The corn crop of the United States is equal in value to the national debt.

Chase County Leader had a nutmeg melon forty-five inches in circumference.

The Ledger reports blue stem prairie grass, ten feet high, as common around Emporia.

Since January there have been 3,377 failures in the United States, liabilities \$74,940,889.

Why is dew like a falling star? One is mist on earth and the other missed from heaven.

Atchison Champion reports a stock of corn seventeen feet high, with five ears each a foot long.

The Burlington Patriot reports peaches 9 3-4 inches in circumference, twelve of which weighed 4 3-4 pounds.

Minnesota grasshoppers, in twenty-eight counties, consumed or damaged 2,646,802 bushels wheat, 1,816,783 bushels oats, 738,415 bushels corn, and then called for more.

In St. Louis the percentage of names is: John, 20; William, 10; James, 10; Thomas, 8; Patrick, 6; Michael, 5; Charles, 4; Edward, 4; George, Joseph and Henry, 3 each.

Sumner county was impoverished by a cucumber fifty-three inches long, seventeen inches around and weighing seventeen and one-half pounds. It grew under a pumpkin tree bearing forty-two huge pumpkins, according to Folks. Suppose you come up and divide, young man.

INDUSTRIAL EDUCATION.

Solanum Rostratum. The Colorado Bug.

From the Atchison Champion, Sept. 21.

TOPEKA, KANSAS, Sept. 18, 1875.

The recent discussion in The Champion on the subject of the horse nettle, Solanum Rostratum, has a bearing upon the subject of industrial education. The discussion brings out testimony in support of the proposition that it is the duty of the State to give some attention to the education of the agricultural class in practical matters of science relating to the plants they cultivate and the weeds and insects they should destroy.

Kansas has not suffered to the extent of some other States from the ravages of the Colorado potato bug, but of late years the damage has been very considerable every year. Other States, with a climate a little more suited to the insect, annually have the potato crop lessened in value to the amount of hundreds of thousands of dollars. The suggestion made by R. J. Groves, in your columns, that the Solanum may be utilized in the destruction of the bug, or in the preservation of the potato from its ravages, is well worthy of consideration. It shows practical observation on the part of the writer, as his communication shows that his views are based upon an ample scientific knowledge of the subject about which he writes. If such knowledge were generally diffused among the "sons of toil" in agriculture, of whom Mr. Groves says he is one, there would be no lack of intelligent observation and experiment, such as would result in the development of the proper means with which to deal with all pests which agriculture is heir to.

The children of our public schools should be taught something of the elements of the sciences which treat of plants and insects. To illustrate this proposition I will go briefly over some of the facts in the history of the Colorado beetle and his association with the genus of plants called Solanum:

The term Solanum applies to numerous plants having a family resemblance, that is having some distinguishing marks in the forms of their leaves, stems and organs of life which show them to have relationship. Such distinguishing marks are easily learned by any child. And such marks of resemblance and variance are precisely such as it delights the minds of children to search out and observe. So too, among insects, the Colorado bug belongs to a family, the members of which have similarity of form and habits of life; and among other things in the character of food they eat.

The native food of the Colorado bug is the pestilent foreigner, which has during the past ten years or more been coming in to occupy our waste places, the Solanum rostratum. For more than fifty years this bug has been observed among the canons at the base of the Rocky Mountains, feeding upon this and other wild species of potato. When civilization marched up to the Rocky Mountains and potatoes, Solanum tuberosum, began to be grown in that region, the

bug gradually acquired the habit of feeding upon the cultivated potato, and then it began its march towards the Atlantic ocean, leaving its progeny by the way to infest the potato fields of the entire northern portion of North America. In 1861 it crossed the Missouri river into Iowa. In 1864-5 it crossed the Mississippi, and now it has reached the Atlantic seaboard.

There is another bug, a native of the Southern States, which is so much like the Colorado bug in appearance and habits that it was at first taken for the latter. It is now called the bogus Colorado bug. Its native food is a species of the Solanum, the Carolina horse nettle, Solanum Carolinense. Entomologists call the Colorado bug Doryphora 10-lineata, and the bogus Doryphora juncta; or in plain English the former is the ten-lined spearman and the latter is the jointed spearman. When the ten-lined spearman came sweeping over Nebraska and Iowa in his march to the sea, specimens sent to Washington were, by the government entomologist, at first supposed to be identical with the well known Southern bogus bug. A more careful examination showed a marked difference, though the two hold a very close relationship. The difference is in minor matters of form, and variations in colors. The tastes of the two are similar, only they run upon different species of Solanum. Each prefers his own native food to any other: the Colorado spearman covets most our solanum rostratum, and takes as his next choice the Irish potato, solanum tuberosum. The Colorado spearman has an appetite first for the southern horse nettle, solanum Carolinense, and takes as his next choice the egg plant, solanum esculentum. Our beetle has perhaps no less a relish for the last named plant than has the other. The Colorado bug, too, takes well to the native food of his southern cousin, preferring even the southern horse nettle to some sorts of the potato. It was upon observing this fact that Prof. Riley, of Missouri, years ago made the suggestion that, "were it not that the nettle is considered a nuisance, on account of the difficulty of eradicating it when once introduced, it would be a good plan to encircle a potato field with a row of nettles so as to concentrate the insects, and thus more readily destroy them." This suggestion was made, referring to the southern horse nettle. The same expedient, occurring now as it does to the mind of Mr. Groves, and having reference to the employment of the native and better relished food plant of the Colorado beetle, the Solanum rostratum, is the more worthy of being put to the test of experience.

It may be that the incoming of Solanum rostratum, and its apparent disposition to occupy the entire region so recently taken possession of by the Colorado beetle, is for no good purpose. But it is certainly a noteworthy fact that the plant which was the native sustenance of that insect before it commenced its lamentable hegira, set out,

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, OCTOBER 2, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Sheep Raising in Kansas.

"I am twenty-four miles from market, and am satisfied that it does not pay to grow grain here, although I have put in 100 acres this fall. I have been raising horses and mules, as well as domestic and pure bred cattle, but as they are troublesome to confine in pastures, and I have no range, shall be forced to give them up. I have been thinking lately of going into sheep, believing that they will pay well for the trouble. I could invest \$1,000 or \$2,000 in such an enterprise, and request your advice and experience in the matter."

The above is an extract from a private letter recently received by us from a well-to-do farmer in McPherson county, and as it is the expression of an idea that is rapidly gaining ground among our farmers we reply in detail.

That Kansas is destined at no distant day to take rank among the great wool producing States, no one at all familiar with the subject will for a moment doubt. There are many reasons for this belief; our dry atmosphere is peculiarly favorable for sheep, and will prove an absolute specific for some of their most troublesome complaints, notably foot-rot; our grasses are abundant and nutritious, and all over the State may be found those immense tracts of land called "divides," which from various causes are illy adapted to general agriculture, but which as "sheep runs" are perfection itself. We have never seen an advantage claimed for Colorado as a sheep growing State that may not be emphasized for Kansas. Notoriously an acre of grass land in Kansas will yield more feed than three Colorado acres.

There is no department of agriculture that will give better and swifter returns than wool growing, and no where in agriculture are such complete failures recorded. The cause of this anomaly is not far to seek. Sheep require constant care and attention, and this matter alone makes all the difference between success and failure. If sheep are tended with care, their wants constantly studied and supplied by those interested in them, they will pay most liberally three times each year, lambs, wool and mutton. If on the other hand they are turned out on the range "to shift for themselves," dogs, wolves, coyotes and our swift Kansas storms will have soon done their work. We have given this matter of wool growing a good deal of careful attention both in Colorado and Kansas, and are prepared to speak positively and from experience of the dangers that beset the novice.

As to the breed, the best sheep to introduce into Kansas are unquestionably the common native stock of Missouri and the

west. If such stock be crossed with good merino rams the progeny will possess most of the valuable qualities of the merino, combined with great hardihood. The valuable qualities of merino sheep are, briefly, heavy fleeces, and their gregarious habits. Merinos keep in close compact flocks, whereas the long wools tend to wander far and wide. Sheep brought into Kansas ought never to arrive late in the season, but the purchases should be made so that they can be shipped immediately after shearing, arriving here while the grass is yet tender and juicy. We find that neglect in this matter is one of the commonest causes of failure. The sheep after their long journey from the east are generally weak and debilitated, and if in addition to this they have to contend with our variable climate, and fodder that is dry and harsh, numbers are certain to fall.

Then in purchasing sheep be sure you have the best. Eastern farmers who have "a few for sale" almost invariably have worthless culls and "broken mouthed" ewes alone to dispose of. Get young sound sheep, even if you have to pay extra prices or purchase whole flocks. I have in mind a Colorado gentleman who three years ago brought into that territory 2,000 ewes, two-thirds of which were "broken mouthed." The first winter he lost 1,200 of these sheep.

If sheep are brought into this State in the proper time and condition, and if after they are here they are well fed, and well cared for every way, we believe that there is no business in the State that will pay as well for the capital invested.—[Prof. Shelton.]

JUDGE BREWER, of the Kansas Supreme Court, has kindly consented to deliver a special course of twelve lectures on Practical Law, embracing those principles and usages of Kansas law which every farmer, mechanic and business man or woman need to understand. This is a new feature in the Agricultural College, and the high attainments of Judge Brewer are a guarantee that this difficult and important subject will be handled with rare ability. The lectures will be given in November before the proper classes. They do not take the place of the regular course in Commercial Law, taught by Prof. Ward, but are additional thereto.

RECENT shorthorn sales in England, show a steady appreciation in the price of high bred animals. The late sales of Lord Dunmore, of Scotland, and Mr. Torr, of England, have created an excitement in Great Britain very like that produced in this country by the New York Mills' sale of two years ago. Indeed the average of Lord Dunmore's sale considerably exceeds that of the great American sale of 1873, as the following summaries will show:

Sept. 10th, 1873, at New York Mills' sale, 109 head averaged \$3,504 50.
August 25th, 1875, at Lord Dunmore's sale, 39 head averaged \$3,700.

Sept. 10th, 1875, at Mr. Torr's sale, 85 head averaged \$2,770 50.

Aside from the enormous averages reached by these recent sales, they have some striking peculiarities which will cause them to be long remembered by Shorthorn men. At the sale of Mr. Torr the cow Bright Empress, brought \$12,750, the highest price ever paid for a female in England. At Lord Dunmore's sale, the bull Duke of Connaught sold for \$26,000, the highest price we believe ever paid for a bull.

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The society holds its sessions in the college building every Friday afternoon at two o'clock.

F. B. QUIMBY, Pres.

A. A. Stewart, Sec'y.

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PRINTING DEPARTMENT

is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer.

Besides regular class instruction in printing, the weekly publication of the Industrialist by the Department furnishes advanced students the requisite drill in newspaper work.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 2, 1875.

Fox has everything in the book and paper line. Sept. 30.—One hundred and forty-eight students enrolled.

See card of Dr. Lyman, if you have any notion of getting sick.

The monthly examinations come off Friday and everybody is busy.

Johnston Bros. will supply you with all kinds of drugs at market rates.

Wm. Knostman will furnish you clothing of the latest styles at lowest prices.

We go to press before the Fair is really begun. It promises well at this writing.

Owing to the earliness of going to press the meteorological report is postponed to next week.

A gentleman living down town offers room rent free to a reliable student. Enquire at this office.

C. F. Briggs has any quantity and every variety of fruits, confectionery and oysters. Just try 'em.

When you want a lightning ride behind a stylish team, Long & Firestone can supply you at a minute's notice.

For twenty cents we will furnish this paper to students during the remainder of the term, delivered at this office.

To any student who will procure one yearly subscription at seventy-five cents, we will give a copy for one year free.

The lecture before the students this week was delivered by Prof. Kedzie, on the life, character, discoveries and persecutions of Joseph Priestly. It was every way admirable.

This outfit, hurrying itself that it might visit the Fair, has been rushing helped thereunto by the kindness and fingers of Mr. Irving Todd and Mr. W. S. Fraunberg—for which many thanks.

The College has lately made the following live stock sales: To George D. McLean, Florence, Marion county, Kansas, one Berkshire boar pig. To L. N. Holmburg, Lindsburg, McPherson county, Kansas, one pair Berkshire pigs.

Since our last announcement of arrivals the following students have been enrolled: Jarvis Kershaw, Pottawatomie county; Wm. A. Knipe, Riley county; Alena O'Leary, Dickinson county; Charles E. Smith, Pottawatomie county.

The Riverside base-ball club had a match game last week with the Topeka club and lost it by five. They report the play of the Westerns very much improved, and are not so confident of "getting away with them" as they were last spring.

We again rise to remark that this office does not do job work for the public and that the Nationalist does—does it well and at reasonable rates. This time it was a stranger, and he wanted us to do \$25 worth of work because Griffin wouldn't do it for less than \$20. Not if the court knows itself!

This paper is published in the interest but not at the expense of the Agricultural College. The deficit in its expenses is met by two gentlemen. When the time comes that its subscription list and advertisements more than equal the current expenses, the profit will go to the students who set the type. Send in your seventy-five cents or your advertisement.

The Riverside is published semi-occasionally by the Riverside base-ball club, of Manhattan. The object of the first number was to arouse public attention to the necessity of a full attendance at the entertainments which were given Wednesday and Thursday evenings by the Amateur Minstrels for the benefit of the club. The salutatory is 'techin': 'Sich is life, and it's getting sicher and sicher.' The leader is spicy. The journal is something

larger than ours; is printed at the Nationalist office; and is just as neat and bright as a new silver quarter. Success to the club and its paper.

The INDUSTRIALIST is a better advertising medium than we had supposed. Some time ago Mr. L. R. Elliott inserted an advertisement offering money at low rates. A month afterwards, while in his office, his clerk asked us how many letters we supposed that "ad" had brought them. "Perhaps a dozen." "Over sixty, from all parts of the State and still coming." Last week Mr. Elliott ordered the advertisement discontinued, as he had no more money to loan at those rates. The paper goes into every county in the State, and has a more valuable circulation for general advertising than its size might indicate.

We call the attention of those who have wares or services to offer students, to the advantage possessed by these columns. The paper is sent for a few weeks to every one making inquiries concerning the College, and is thoroughly read not only by those who afterwards enter, but by those who are thinking of so doing. The consequence is that before they arrive the attention of students is attracted to advertisements. And our rates are so reasonable that we know Manhattan business men cannot make a better investment when they wish to reach students.

As respects the general population of Manhattan itself and especially of Riley county, the columns of the Nationalist are far superior to ours. It is the county paper and regularly reaches hundreds who, except for its notices, would not know that such a paper as this existed. Those who have anything to offer to the citizens of Manhattan and Riley county will make money every time by saying so in the Nationalist. And where persons wish to reach our readers, they will also make money by saying so in these columns.

HORTICULTURAL ITEMS.

Where trees have been well cared for they have made a good growth and are now ripening up nicely for the winter.

Most trees came through last winter with vitality greatly weakened, consequently many have suffered from the flat-headed borer. Those with well shaded trunks have mostly escaped injury.

The experimental pear orchard looks well. Though this orchard was planted in the spring of 1874 and hence more liable to suffer from the locust, eighty-four per cent of the trees are now living and many of them promise bloom next spring. The soil of this orchard is a moderately rich upland loam with a reddish clay subsoil very thoroughly underdrained. Probably no better selection of soil and subsoil could be made for experiment in pear culture.

Students' Column.

The Webster Society meets Saturday evening of each week. It is aimed to maintain the Webster as a purely young men's society. Its meetings are public. Visitors are invited. At the meeting of last Saturday night was a goodly attendance of members and visitors. The following question was discussed: "Can a person become a proficient scholar by simple study, without practical application." Then followed miscellaneous exercises. Society appointed a committee to repair its library, and to remove it from the old College to the telegraph hall of the Industrial building. The committee was instructed to obtain, if possible, the telegraph hall as a place of meeting for the society. Applications for membership were received from Messrs. Hodges, Hulett, Mails and Whitted. Messrs. Travelute and King were received as members. After appointment to the several duties, the following question was adopted for the next meeting: "Resolved, That railroads are more beneficial to a country than are navigable rivers."

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Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission. 17

[Concluded from first page.]

about the same time, on its march toward the sea. J. H. Carruth puts down the *Solanum rostratum* as having come to Kansas in 1864. It was but a year or two later that Mr. Scarbrough, of Atchison, described it as a new plant on the banks of the Missouri, and as having come in from the west.

As agriculture is the predominant interest in the State, and as much the larger amount of the money expended in education in the State goes for the instruction of farmers' children, why should not some attention be given in our public schools to instruction in the elements of those branches of learning which treat of plants and insects? To give point to this inquiry has been the object of this communication. Illustrations showing the importance of the subject might be given and explained indefinitely. A knowledge of insects is rapidly on the increase, notwithstanding the study is kept out of the schools. Less than ten years ago the round-headed apple tree borer, though infesting orchards everywhere in the west, committed his ravages with impunity, because few knew of his habits or even existence. Now every intelligent fruit grower is acquainted with his lurking place, and has learned how to search for him. Observation has discovered two dozen enemies of the Colorado bug, enemies of his own kind, which prey upon him and devour him or his larvæ. Every child should be taught to distinguish such useful insects from those whose destruction is demanded.

A competent observer published in the *American Entomologist*, in 1868, an estimate that the agriculture of this country suffered from the depredations of noxious insects to the annual amount of three hundred millions of dollars. The same authority estimated the annual saving to the State of New York, from the writings of Dr. Fitch on noxious insects, to annually amount to fifty thousand dollars. If such a result is reached from the efforts of one man what would not be accomplished if in preparation for their life work the children of the agricultural masses were made to become intelligent observers of the insect world whose works of good or ill are every day to be seen around them?

Students Enrolled Since Aug. 26, 1875.

NAMES.	COUNTY.
Allen, Edwin R.	Chase.
Beals, Sarah F.	Chase.
Beckwith, Weldon E.	Wabaunsee.
Boies, Frank	Jefferson.
Brous, Wilber	Pottawatomie.
Brown, Mark L.	Riley.
Browning, Alice M.	Riley.
Browning, Emma E.	Riley.
Browning, Lois	Riley.
Burroughs, Lettie M.	Riley.
Campbell, Ettie A.	Riley.
Child, Ella	Riley.
Conroy, Emma	Riley.
Craig, Addie J.	Paint Co., Mo.
Craig, Sarah	Paint Co., Mo.
Crowl, Florence	Pottawatomie.
Crowl, Jessie C.	Pottawatomie.
Damon, Rosa M.	Riley.
Davidson, Geo. K.	Indian Ter.
Davidson, Wm. B.	Indian Ter.
Dellinger, Jno. F.	Linn.
Dow, Chas. A.	Coffey.
Eells, Allan B.	Riley.

Eells, Hattie M.	Riley.
Ellsworth, Miles	Atchison.
Emmons, Geo. E.	Pottawatomie.
Evans, Esther T.	Plainfield, Ill.
Failyer, Geo. H.	Cherokee.
Failyer, Mariam	Cherokee.
Failyer, Miriam	Cherokee.
Fay, Chas. W.	Riley.
Flack, Jno. B.	Dickinson.
Fletcher, Ellen.	Riley.
Fraunberg, Wm. S.	Labette.
Fuller, A. P.	Franklin.
Gale, Ella M.	Riley.
Gale, Geo. A.	Riley.
Garrett, Nina	Wyandotte.
Gibbon, Jno. W.	Coffey.
Gillett, Chas.	Pottawatomie.
Griffing, Jno. S.	Riley.
Griffing, Wm. J.	Riley.
Grover, Chas. M.	Nemaha.
Grover, Ella	Pottawatomie.
Grover, Mary A.	Pottawatomie.
Harding, Rowanna	Riley.
Harding, Rowena M.	Riley.
Harding, Thos. A.	Riley.
Harper, Josephine C.	Riley.
Haun, Jno. C.	Harvey.
Hibbard, Alice	Riley.
Hodges, D.	Coffey.
Hodges, S. R.	Coffey.
Houston, Chas. S.	Riley.
Houston, Grant U.	Riley.
Houston, L. N.	Riley.
Hoyt, Fred O.	Brown.
Hoyt, Kate	Riley.
Hulett, Turner C.	Johnson.
Hurlburt, Alice M.	Lyon.
Huston, Chas. M.	Davis.
Ingraham, Florence	Riley.
Kay, Jas. S.	Pottawatomie.
Kershaw, Jarvis	Pottawatomie.
Kimball, Carrie	Riley.
Kimble, Martha	Riley.
Kimble, Mary	Riley.
King, John	Marshall.
Knapp, Frank	Miami.
Knipe, Wm. A.	Riley.
La Tourrette, Jas. F.	Colorado.
Leasure, Marion F.	Linn.
Lewis, Eva M.	Pottawatomie.
Lewis, Ira H.	Labette.
Lynch, James H.	Cherokee.
Mails, Chas.	Pottawatomie.
Mails, Jennie E.	Pottawatomie.
Maltby, Jas. C.	Saline.
Maltby, Wm.	Saline.
McCallum, Albert M.	Davis.
McCallum, Chas. P.	Davis.
McConnell, Chas.	Riley.
McKelvy, Robert	Washington.
Meacham, Mary A.	Riley.
Meeker, Julian L.	Franklin.
Merritt, Arthur	Jefferson.
Metcalf, Holmes D.	Franklin.
Noyes, Amelia	Wabaunsee.
O'Leary, Alena	Dickinson.
Oursler, Alphonso R.	Jackson.
Parkerson, Fannie R.	Riley.
Parkerson, Freeman	Riley.
Parish, Effie	Riley.

Parish, Ella	Riley.
Parish, Emma	Riley.
Parsons, Mildred B.	Kan. City, Mo.
Patee, Henry	Riley.
Peckham, W. H.	Riley.
Penry, Chas. E.	Reno.
Platt, Geo.	Riley.
Powers, Herbert W.	Riley.
Quimby, Frank B.	Clay.
Rambo, Anna	Lyon.
Rambo, Jas. W.	Lyon.
Redenbaugh, Lydia	Osage.
Rhoades, Anna H.	Pottawatomie.
Richmond, Corydon	Sedgwick.
Riley, Lizzie M.	Riley.
Rogers, J. W.	Dickinson.
Rogers, L. B.	Dickinson.
Rogers, Hope L.	Dickinson.
Rogers, Julia F.	Osage.
Romick, J. W.	Dickinson.
Roper, Nida	Riley.
Russell, Chas.	Tierra, N. M.
Sawyer, Nellie	Franklin.
Sanford, Lillie	Osage.
Schwalm, Jno.	Coffey.
Shaw, James	Riley.
Sikes, Melva E.	Pottawatomie.
Sikes, William H.	Pottawatomie.
Smith, Charles E.	Pottawatomie.
Stockwell, Sam'l H.	Nemaha.
Thompson, Chas. H.	Wabaunsee.
Todd, Irving	Riley.
Travelute, Charles F.	Marshall.
Ulrich, Wm.	Riley.
Wake, Geo. A.	Riley.
Warner, Cora	Riley.
Warner, Nannie E.	Riley.
Weeks, Abbie C.	Marshall.
Wertzberger, Anna	Wabaunsee.
Whitman, Ida G.	Osage.
Whitman, Minerva	Osage.
Whitney, Kittie S.	Riley.
Whitney, Genevieve	Riley.
Whitney, George	Douglas.
Whitney, Willard	Riley.
Whitted, Chas. S.	Osage.
Williston, Carrie	Riley.
Williston, Frank H.	Riley.
Winne, Ella M.	Riley.
Winne, Jno.	Riley.
Wisner, Albert	Riley.
Wisner, Wm. M.	Riley.
Wood, Arlie	Labette.
Wood, Frank W.	Jefferson.

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THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, OCTOBER 9, 1875.

No. 25.

THE INDUSTRIALIST.

Published Every Saturday,

BY THE

PRINTING DEPARTMENT

OF THE

KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

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The Apple Tree Borer.

[Report of the Committee on Entomology to the Douglas County Horticultural Society, Sept. 18th, 1875.]

From the Lawrence Journal.

Your committee beg leave to offer the following deductions from their observations of flat and round-headed apple tree borers, so destructive to the orchards and to shade and ornamental trees, during the years of 1874 and 1875, in this State:

FLAT-HEADED BORERS.

First: This very destructive insect made its first appearance on May 25th; were the most numerous between the middle of June and first of August. A few were seen as late as August 26th.

Second: They commenced depositing eggs by the middle of June, and were placed under scales and in the crevices of the bark, generally upon the sides exposed to the direct rays of the sun. Wounded portions made by bruises and trimming off of limbs and sun scalds, are especially inviting to their deposits.

Third: They infest only such trees as are debilitated. Late transplanting, protracted drouths, derangements of the organisms by extremes of heat and cold, unproductive soil, neglect in care and cultivation, produce a low condition of vitality in trees, a condition sought for by the mother of these species, as most naturally adapted to a successful procreation.

Fourth: The larvæ, or worm, cannot survive a vigorous flow of sap, nor can it endure a continued shade. In the first condition it drowns, and in the second it weakens and dies.

Fifth: It deposits its eggs during the middle of the day, and only during warm, sunny days. In the morning and evening, on stormy days, and during the night, it retires to the small limbs, among the dense foliage for a covert, and is very sluggish.

Sixth: It infests the apple, pear, cherry, plum, quince, soft maple, willow, ash, tulip and strawberry trees, and there is some evidence that the elm and cottonwood are being attacked by it.

In view of the foregoing facts, your committee would recommend that all such varieties of trees found liable to the attacks of this insect should be planted in the spring as early as the ground can be placed in suitable condition to receive them, and, to facilitate early planting, fall plowing and preparation is advisable. That vigorous trees, carefully dug so as to preserve a large amount of the roots, be obtained in the fall and properly trenched in upon the premises handy for planting. As soon as set, remove a large portion of the last year's growth. Mulch the ground for the space of two feet around at least, three or four feet would be better; wrap the bodies with some cheap material, as newspapers, hay or old rags. Plant no crops among them which prevent constant and thorough cultivation of the ground, and especially leave ample room on each side of the rows for the free use of the plow without endangering the roots or chafing the bodies and limbs. This care in planting, followed with constant cultivation, will produce a strong, vigorous action, which of itself is the most complete safeguard against the attacks of this borer.

If, through ignorance or neglect, trees already planted become infested during the year previous, the only method of combating is to destroy the beetle as soon as it comes forth from its burrow. The time, as stated, of the first appearance is the last of May, and at this time the search should begin and be kept up unceasingly and thoroughly through the season, or until the last one has been captured and destroyed. As alleged in deduction No. 5, the beetle is active only during the middle of sunny days, and in the morning and evening and during cloudy and stormy days it is sluggish. At such times it is the most easily captured. A touch even, or a jarring of the tree, will frequently cause it to drop to the ground and, possum like, it will appear as dead for a moment, and is easily killed. But in the middle of the day, when the sun has warmed it, it is very active and quick to run, often taking to the wing to escape at the first approach of man. However, if approached from the opposite side of the tree, a quick slap of the hand, covering it, will destroy in most attempts. Generally it will be found upon the southern side of the tree, basking in the sun's warmth, though at the approach of man it will often quickly glide to the opposite side to conceal itself from sight. All sides should be carefully looked to.

Your committee would especially call your attention to deductions Nos. 2 and 4. In No. 2 it is stated that sun scalds are favorite spots, inviting the attack of this borer, and in No. 4, that it does not seek nor can endure a continual shade. These two facts furnish a strong argument in favor of low heads and dense growth as requisite to successful orcharding in this climate, as sun scalds seldom occur upon trees of such form, nor will a dense growth furnish congenial conditions for the existence of the progeny of the flat-heads. As it is not presumable that all the beetles will be captured

it will become necessary to examine the trees for the purpose of destroying the worms hatching from the eggs which the uncaptured beetles may deposit. To detect their whereabouts is to the inexperienced quite a difficult undertaking until late in summer or early autumn. No external marks indicate their presence save a small speck, or sometimes a dark line, so fine that they will not attract the attention of those not understanding the cause as anything injurious to the tree. It will be necessary for such persons to examine into every unnatural looking spot the eye may detect. Experience will soon remove the necessity for so close and careful examinations and enable them to detect which are the reliable markings indicating their presence. In this work a sharp knife is all that is needed if begun in proper time, as they will be found in and just under the bark until about September first, when the first ones hatched will commence to penetrate the wood. A probe made of common broom wire is all sufficient with which to thrust them through or drag them from their holes. If after several thrusts, a milky substance is discovered at the extremity of the probe it is safe to conclude that a fatal stab has been given the worm and you can pass to the next. They will be found the most numerous along the margins of wounds and of new formations, healing places, where limbs have been cut off, and upon the sides of limbs having an exposure to the sun. Limbs which have become bent by a heavy load of fruit are liable to their attacks upon the upper side, as the sap becomes sluggish in such.

ROUND-HEADED BORERS.

These have been very numerous in some orchards this year, but such instances are where their destruction in previous years has not been thorough, or they may have swarmed in from neglected adjoining orchards, which have become breeding dens of all classes of noxious vermin, and scatter the seeds of ruin and destruction among the grounds of the honest, vigilant and industrious.

Your committee are so fully impressed with this great wrong perpetrated upon honest industry in the community, by a class of slipshod horticulturists—reckless not only of their own interests but of their neighbors'—that their denunciations of such neglect cannot be too strongly expressed. It is the cause of much discouragement among the intelligent and industrious, and deters many from giving a proper attention to their own grounds for its protection.

The natural habits of this borer are quite the reverse of that first mentioned. There is no similarity in the beetle state. They mature and are ready to emerge from the tree the first of June in this climate and so nocturnal is their nature nothing save force can induce them to leave their burrows during day time, but as soon as night shuts out the day they cut away the thin film of bark covering their burrow, come forth, and in a few days acquire strength for the work of

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, OCTOBER 9, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Sand Burs.

The war of extermination against the sand bur, so strongly urged by many of the newspapers, seems to raise the question as to what the sand bur is, and how it may be exterminated. At least three different plants belonging to as many different orders have been received with the question, "Is it a sand bur; if not, what is it?" The largest of these is known to botanists as, *Xanthium strumarium*, and should be called cocklebur. It is a coarse, vile weed, often growing to the height of three or four feet, bearing burs nearly an inch in length, which in the fall of the year are too frequently found in the hair and wool of domestic animals; in sheep pastures they are an intolerable nuisance.

The next plant suspected as being the execrable sand bur is *Solanum rostratum*, an unwelcome intruder from the west and southwest. It was first observed in Kansas about the year 1864 and is now perfectly at home in our midst. As this is not described in the botanies in general use but few persons are acquainted with the real character of it. It usually grows in dense patches at the roadside, along paths and in waste grounds around our cities. It often attains a height of two feet and in its flowers and leaves somewhat resembles the tomato, but differs from the black night shade, the horse-nettle and other species of the same genus in having its fruit covered with a prickly calyx.

But the plant perhaps best entitled to the name of sand bur, is *Cenchrus tribuloides*, bur grass, which is very abundant along the sandy coast and around the great lakes, and on the sandy hills of Pennsylvania, where it has long been known as the sand bur. This plant is a true grass and would hardly be known from the grasses in our door-yards till the burs make their appearance. Although these are much smaller than the burs of either of the other plants, their prickles are so sharp and firm that they will penetrate almost any article of clothing, and as they are barbed the bur usually retains its hold till detached by hand. These grievous nuisances are becoming quite common in some parts of the State, but as all these are annuals to exterminate them it is only necessary to prevent them from ripening their seed. No farmer should allow either of them a foothold on his premises. —[Prof. Whitman.

THE white leaguers are creating more trouble in Mississippi. They seem determined by intimidation to prevent the negroes from voting.

THE Farm Department acknowledges the receipt of sixteen quarts of the famous Clawson wheat, and eight quarts of winter rye, from the Department at Washington. These will be sown in plats and results carefully noted.

The practice of introducing seeds grown under different conditions as to soil and climate from those obtained where the seed is to be sown ought to be more generally followed in Kansas. A year ago two bushels of Wick's white wheat were obtained from Michigan and sown upon the College farm. Precisely the same treatment received by the common May wheat grown upon the farm was given it, and it yielded fully one-half more than the May, of a much better quality of grain.

Boiled Down.

Kansas buys 10,000 wagons a year.

Cherokee county has a seven foot stalk of cotton.

Hay is put up in Ellis county at \$1.75 per ton.

T. C. Henry has 2,500 acres in wheat near Abilene.

Two antelopes were killed in a corn field near Hays City.

There was a 150 pound Kansas pumpkin at the Kansas City Fair.

Corn is selling in Neosho county at fifteen cents per bushel.

Jewell county has a bunch of millet seven feet nine inches high.

The famous trotting mare, American Girl, fell dead on the 2d.

The Wichita Beacon is wrestling with a ninety pound water-melon.

The fight in Lawrence is whether the county shall repudiate its bonds.

The Independent wants Oskaloosa to cut and burn the Mexican burs. Do it.

Said that rye sown on unbroken prairie sod makes a good yield and kills the grass.

Gen. Grant and Jeff. Davis were guests of the city of St. Louis at the same time a few days ago.

And now comes the Ottawa Triumph with a bean pod containing 1,752 beans. Bring along your pork.

Kansas will have the usual 100,000 immigration this year, and the herd law counties will get the bulk of it.

The Osage Chronicle spells Maraias des Cygnes "Marydezeen." We go for "Mary dozen," written "Mary 12."

The farmers and coal men around Fort Scott offer work to three or four hundred men at from \$1.50 to \$2.50 per day.

Theodore Tilton has started on his lecturing tour. The first lecture was delivered in New York, the evening of the 5th, before a crowded house.

D. R. Anthony has been to New York consulting eminent physicians. He is now able to attend to his business and looks about as well as he ever did.

As an evidence that Kansas was utterly destroyed by grasshoppers during the last three weeks of August, the K. P. earned \$24,212 more than during the same period of previous year, and the A., T. & S. F. \$37,319 more.

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THE

PRINTING DEPARTMENT

is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer.

Besides regular class instruction in printing, the weekly publication of the Industrialist by the Department furnishes advanced students the requisite drill in newspaper work.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 9, 1875.

Meteorology.

For the week ending Oct. 6, 1875. Condensed by Prof. Kedzie, for the Industrialist, from the records of the Chemical Department:

DAY OF WEEK.	Thermometer.			Bar.	Rainfall in in's.
	Max	Min.	Me'n		
Thursday.....	72°	50°	58° 1/2	28.65	
Friday.....	65	41	50 1/2	28.91	
Saturday.....	74	50	61 2/3	28.79	
Sunday.....	83	54	66 2/3	28.73	
Monday.....	80	40	63	28.79	
Tuesday.....	63	48	55 1/2	28.81	.54
Wednesday.....	62	40	50 1/2	28.92	

Average Temperature for the week, 57° 95.
Range of Temperature for the week, 43°.
Average Barometer for the week, 28.80 in.
Rain-fall for the week, .54 in.
Per cent of cloudiness for the week, 41.

At the residence of Prof. Shelton. It is a boy.

October 8.—One hundred and fifty-three students enrolled.

On account of the Fair last week some of the literary societies did not meet as usual.

A swarm of "yellow jackets" visited our office this week. We did not ask them to call again.

A postal from S. C. Shuemaker asks, "Where is the INDUSTRIALIST?" It is mailed to you regularly.

We are thankful for the gentle rain on Tuesday evening, but would be more thankful for enough to do some good.

Dr. B. W. Wright, Mayor of Oswego and Representative from Labette county, paid the College a hasty visit last week.

Again we chronicle the absence of the Managing Editor, and consequently his irresponsibility for anything which appears this week.

The name of Miss Kate Hoyt appears at the head of the monthly grade for September in the printing department. Whose name will head the list this month?

A lady on College Hill, somewhat noted for her knowledge of ornithology, etc., attempted the other day to describe the difference between a "cultivated" chicken and a prairie chicken. She failed.

We acknowledge the receipt of the July and September number of the "Proof-Sheet," published by Collins & McLeester, Philadelphia. It is brimful of excellence and is of incalculable worth to the practical printer.

The following names have been added to the list of students now attending the College: Lottie Dunbar, Topeka; Mattie Carpenter, Canadaville, New York; Joseph Arnold, Columbus, Indiana; George Higinbotham, Riley county; Annie Flack, Dickinson.

Attention is called to the advertisement of Conover Brothers, music dealers, Kansas City, Mo. These gentlemen are general agents for Decker Bros., the popular "New Scale Haines" Pianos, and the Matchless Burdett Organs. Correspondence solicited and catalogues mailed.

The reporter of the Alpha Beta Society failed to give us the result of that moot-court which was in session at the last regular meeting of the Society. We have been informed, however, that after a long and exciting trial a verdict was rendered in favor of the defendant. The suit was instituted to recover damages for non-fulfillment of contract.

W. C. Howard, J. E. Williamson, C. A. Streeter, Frank Landon and H. S. Maynard, students of the College last year, are teaching school. The first is engaged near Topeka; the second, at Grantville, Jefferson county; the third, at Bellegarde, Pottawatomie county; the fourth, near Vienna, Pottawatomie county; and the last, at Randolph, Riley county. Some of these persons expect to attend the College next term.

Meteorology of September, 1875.

The readers of the INDUSTRIALIST will doubtless be interested in the general characteristics of the meteorology of the month of September just completed as compared with the same month in preceding years. These general features may be briefly summed up as follows:

Maximum temperature, Sept. 8th.....	97°
Minimum temperature, Sept. 22d.....	34
Range of temperature for the month.....	63
Average temperature for the month.....	66.74
Maximum barometer, Sept. 21st.....	29.13 in.
Minimum barometer, Sept. 30th.....	28.64 "
Range of barometer for the month.....	.49 "
Average height of barometer.....	28.87 "
Rain-fall for the month.....	2.85 "

Thus it will be seen that the past month while the warmest September we have enjoyed for the past four years yet in temperature is just .97 of a degree below the average temperature of this month at this station for the past fourteen years. The month has proved an exceptionally dry one, furnishing a rain deposit of .51 of an inch below the average for the fourteen years past, and but little more than half the rain-fall for the same month last year.

In the following table is included, for the purpose of comparison, the general features of the month of September for the past six years:

	1870.	1871.	1872.	1873.	1874.	1875.
Max. temp.	92°	92°	96°	98°	98°	97°
Aver. "	68° 33	67° 22	66° 24	66° 37	65° 60	66° 74
In. rainfall,	4.57	1.92	5.70	1.85	4.53	2.85

In the above table the minimum temperatures are omitted as unimportant for comparison. The first frost of the present season occurred on the morning of Sept. 18th, when very slight traces were observed. Up to the present date of writing, however, vegetation has not been affected to any appreciable extent. —[Prof. Kedzie.

The Websters met as usual last Saturday night. The relative benefits of railroads and navigable rivers were thoroughly discussed. The judges were convinced that railroads are the more beneficial. After debate the society listened to select reading by J. B. Flack and a declamation by L. B. Rogers. All members took an active part in extemporaneous speaking. Several new members were then initiated. Committee on library then reported to have moved it to the telegraph hall, where the society will meet hereafter. A committee was appointed to receive bids for doing the janitor work of the society. The following question was adopted for next meeting: "Is England likely ever to become a Republic?"

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OF THE

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[Concluded from first page.]

procreation. The eggs are generally placed at or near the crowns of trees, sometimes among the forks of the branches leading from the trunks and sometimes upon the trunks, when shaded. They infest alike, healthy and unhealthy trees, and are frequently the cause of their death. They require the most of three years to complete their mission from the egg to the beetle. Their course is generally downwards the first year, and upwards, just under the bark, sometimes within the sap wood, the fore part of the second year. At the approach of winter, during its second year of life, it cuts a passage into the wood with the upper end leading out to the bark. At this upper portion it constructs a bed of fine threads of the wood, firmly packed and filled up, with like material the upper end, then rests, awaiting nature's work of transforming a worm into a higher state of existence, the winged and perfect stage of its life. At the time afore mentioned, June 1st, the following season, it is fully changed and matured. It works its way through the filling of the upper passage to the bark, cutting through that, it escapes from its prison house.

The work of successfully combating this insect is simple, when its nature is understood. Unlike the flat-headed species, it discloses its burrow by throwing out a red dust as soon as it has eaten through the bark, and by this sign is easily found. A hoe, knife and probe constitute the necessary outfit. With the first remove the dirt from the crown to the depth of four or five inches; with the knife follow the places from which the dust has been thrown out, until the worm is found and killed; then scrape off all the dirt and dead bark and examine every unnatural looking spot to make sure that none escape. The probe is to be used in the manner as stated in hunting for flat-heads. If the search and extermination has been thorough, draw back the dirt at once, as the moisture and protection from the atmosphere will hasten the healing of the wounds. The first and second weeks in September are deemed the most advantageous times for this work, as the worm will by that time indicate its whereabouts by casting out the dirt, nor will it have had time since hatching to do much damage. But under no circumstances should it be deferred until a later period. All other jobs should be laid aside until this work is well and thoroughly done.

Your committee are fully sensible of the difficulty of conveying instructions without the means of object illustrations; that more truths can be imparted in a few moments by the hand of practice among the orchards, than by columns of the most carefully written descriptions; and they are not insensible to the importance of a united action in the work of exterminating all classes of vermin infesting our orchards, gardens, and ornamental grounds; that it is almost useless for a single individual to attempt even his own protection while the many around him neglect to do their share of the work.

The growing of orchards is a pursuit requiring prompt and intelligent work, and no part of it is of more importance than its protection against insect foes. No neglect can ever be made up in the final balance sheet. It must ever stand as a loss. Judgment and careful attention must at all times be the unalterable rule to secure success.

Respectfully submitted,

G. C. BRACKETT,
N. P. DEMING,
THOS. PIERSON.

KANSAS STATE Agricultural College.

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Keeps constantly on hand and for sale, specimens of
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ESSEX SWINE. | DEVON CATTLE.

We offer for sale three fine yearling bull calves, as follows:

One Short-horn bull, red; got by Minister 6363, out of Grace Young 5th. Price, \$200. Grace Young 5th sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price, \$100.

These prices will place this stock within the reach of Kansas farmers and stock men.

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HOUSEHOLD CHEMISTRY,

By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc.

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KANSAS PRACTICAL AGRICULTURE.

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loway Cattle; Berkshire, Essex, Lancashire
and Poland China Swine.

COLLEGE LANDS.

The lands of the Kansas State Agricultural College are located in Riley, Clay, Dickinson, Marshall and Washington counties, and comprise some of the choicest tracts in those counties. As these, with one exception, are herd law counties the value of the land for farming purposes is much enhanced; and the further fact that they are

FREE FROM TAX,

until patents are due, makes them the cheapest lands in the market. Prices from \$5.50 to \$10.00 per acre.

Terms of Purchase:—One-eighth cash, and balance in seven equal annual installments, with annual interest at ten per cent., or any greater portion of the whole amount may be paid in cash at time of purchase. For further particulars, address

L. R. ELLIOTT,

Agent for sale of College Lands.

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sit and Level.

The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Habits of Plants.

Thorough Instruction in

Vegetable Physiology.

Tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants; and of native and foreign weeds.

INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying Insects inimical to the Kansas Farmer.

THE INDUSTRIALIST.

KANSAS STATE AGRICULTURAL COLLEGE.

VOL. 1.

MANHATTAN, KANSAS, SATURDAY, OCTOBER 16, 1875.

No. 26.

THE INDUSTRIALIST.

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BY THE

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OF THE

KANSAS STATE AGRICULTURAL COLLEGE,
MANHATTAN, KANSAS.

Terms of Subscription.

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Drawing in our Schools.

From the Topeka Commonwealth.

As our Board of Education has added drawing to the list of studies to be taught in our city schools, a brief account of the art as a popular branch of education is in order.

Drawing as a branch of common school instruction may be said to have been introduced in this country in 1871; first in the Massachusetts schools. The Legislature of that State in 1870 passed an act including drawing among the branches required to be taught in the public schools; also providing that any city or town might, and every city and town having more than ten thousand inhabitants should make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day or evening schools, under the direction of the school authorities. The law, it will be seen, contemplated both the introduction of the study into all the public schools of the State and the establishing of free day or evening schools for instruction in drawing to youth and adults.

Difficulties were found in the way of practically carrying out the intention of the law, the chief of which were the want of competent teachers and the want of systematic methods of instruction adapted to the popular requirements. In 1872 a committee of the Boston School Board entered into correspondence with European drawing masters, resulting in the employment by the Board of Mr. Walter Smith, then master of the School of Arts of Leeds, England, who brought with him models and apparatus and set about the work in so masterly a manner as in a very short time to popularize the study and lead to its successful introduction into the schools of Massachusetts and, since, quite generally into the schools of the other eastern States. Mr. Smith took the office of instructor of teachers, acted as head master of art education in the Normal Art School in Boston, as director of the night classes for drawing, in the employment of the State, and as professional adviser and lecturer in the matter of art education throughout the State, in this lat-

ter capacity giving lectures and teaching exercises in the Teachers' Institutes, and setting in right operation the schools for adult classes in those cities and towns required to maintain them.

A course of instruction was arranged which comprises what is usually included in the term mechanical or industrial drawing. This course was that adopted for the night schools, and it enters largely into the plan of instruction employed in the common schools. Remarking upon this feature of the system of instruction, the secretary of the State Board of Education, after a year's trial, said: "The teaching of industrial drawing has called forth a degree of interest, not to say enthusiasm, altogether beyond my expectation. In many of the cities large classes have been formed, and are now instructed in evening schools composed of persons, not by mechanics, of all ages from fifteen to fifty. The number in attendance has been large, varying from one hundred and twenty to over four hundred."

The experience in Massachusetts dispelled the objection of a want of competent teachers which had before been an obstacle to the introduction of the study as a popular branch of education, an objection which at first seemed likely to render the law of 1870 a nullity. Experience proved, as testified by the secretary of the State Board, "that every one who can learn to write can learn to draw, and that drawing is simpler in its elements and more easily acquired than writing. Special instructions are no more required for drawing than for writing or arithmetic." A member of the Board said:

"We have passed through what we regard as a successful experience of two years, and find our teachers as capable of teaching drawing as giving instruction in penmanship or arithmetic, when the same care is employed and the same interest and determination to secure success are felt by the teachers."

The State Director in his report for 1874 said: "The greatest difficulty that had to be met in popularizing instruction in drawing in the common schools was a general belief among teachers and others that ability to draw was a special endowment, like any physical peculiarity, and that those to whom nature had not made a present of the faculty would waste their time in trying to attain it. This is an old delusion and dies hard, and has the seeming power of coming to life again, no matter how often it is killed." But he says experience proves that every child under instruction as now taught succeeds in learning to draw.

In recommending the adoption of drawing as a branch of study in the common schools of Ohio the State Superintendent in 1872 said: "Our native artisans have a right to complain of the indifference of legislators and school officials to their interests, when they see workmen trained in foreign countries occupying the best places in our workshops and factories, and our public buildings planned by foreign architects and erected under their supervision. Intelligent

manufacturers see clearly that neither protective tariffs nor free trade will enable us to compete with other countries in the manufacture of products requiring taste and skill, so long as no adequate provision is made for art culture in those schools where our mechanics and artisans receive their education. Among our teachers and educational men generally there is a growing conviction that the example set by Massachusetts should be followed by Ohio."

The system of instruction adopted in our city schools and just now being set into operation under the care of a skilled instructor, is one specially planned for the benefit of the industrial classes; it is made a branch of industrial education. At the same time it cannot but be of advantage to all. Drawing trains the eye and hand. It quickens observation and perception. It cultivates the judgment as to form and proportion. As a school study it relieves monotony and adds an element of zest and enjoyment to the dull routine.

Of the tens of thousands of young ladies serving the capacity of cashiers and bookkeepers, in every city throughout the country, not one to our knowledge has ever been arrested for embezzlement. This fact, together with their characteristic faithfulness and freedom from habits of dissipation, has brought their services into requisition, and the time is at hand when their faithfulness, integrity, and habits of neatness, will, if thoroughly qualified, secure for young ladies the most honorable and lucrative positions in the commercial world.

Boiled Down.

Girard has a pickle factory.

Topeka claims a population of 8,016.

The Blue Rapids Times reports ice Sept. 20th.

Jefferson county can feed 10,000 head of cattle.

Beloit has turned its calaboose into a limekiln.

The Miami Republican has a 143 pound squash.

Harvey county claims to have work for 200 men.

The ague is shaking people generally in the valleys.

Franklin county rejoices in 150 bushels onions to the acre.

A Cowley county man had three thousand pounds of grapes.

Another Normal School for southwestern Kansas is talked of.

One hundred bushels of corn to the acre in Greenwood county.

The Parsons flour-mill turns out 600 barrels of flour per week.

Lawrence has a Board of Trade, but is not overboarded with trade.

Washington Republican wants to know if people are ready for prairie fires.

Sedgwick county has 682 sheep and 928 dogs; Allen county, 827 sheep and 1,147 dogs.

The Arkansas Traveler reports seven acres of wheat averaging 52¾ bushels per acre.

Ex-Attorney General Archie Williams has made a strong speech favoring the herd law as a State measure.

The Missouri Pacific will put on a fast mail train, and make the run from St. Louis to Leavenworth in ten and a half hours.

Kansas adds silk worm eggs to her other exportations. A few days ago two boxes of eggs worth at least \$3,000 were shipped to France.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 16, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

The Climber for Kansas.

In almost any woods can be found a beautiful and vigorous climber sometimes called the American Woodbine, the Virginia Creeper, and by botanists the Ampelopsis, or "like-the-vine." In appearance and habit of growth it greatly resembles the poison vine, both being often found on the same tree. They can only be distinguished by the leaf. On the poison vine two leaves grow opposite each other, with a third or central one having a stem about an inch long. When young, or at a distance, the poison vine seems to have a leaf with three lobes. Like the subject of the trinity it cannot be handled comfortably. The leaf of the ampelopsis has five lobes, or leaflets rather, growing from the end of the stem, lance-shaped, and can easily be remembered by looking at the four fingers and thumb of the hand. It is as harmless as a honeysuckle. At this season the leaves are turning to a rich scarlet, and it should be secured at once.

We wish to call attention to it as an ornamental climber for Kansas homes. The fact that it covers the tallest trees is the best evidence of its ability to withstand the winds, sudden changes and extremes of this climate, and any one who will note the luxuriance of its growth and the exquisite color of its leaf in autumn will desire to obtain it. It has the great merit, in the eyes of lazy husbands, of taking care of itself; requiring no tying, tacking or pruning.

In planting do not bury the roots in a deep hole. You will find them just under the surface in the mellow leaf-mold. Give them a similar position and soil.

Act in the Present.

"It will all be the same in a hundred years." What nonsense! It will be nothing of the kind, judging the future by the past. Why only think of a hundred years ago, in the matter of Agricultural Colleges for instance! What had they? And yet the great men, yea, the professional men of that day, did not despise farming. George Washington had his farm at Mt. Vernon which he superintended with the greatest care, drawing plans for his lawns and garden plots, and naming every tree which should adorn them.

Thos. Jefferson, the practical industrialist, was writing treatises on independence and running his big farm at Monticello. And by the way, he never would have spread out that Declaration to any such extent if he

had not had that same farm. "When in the course of human events," that came of waiting and watching for rains to fall and crops to grow; that is the way to learn that human events will take their course. "It becomes necessary for one people;" his long journeys, in his own conveyance, all the way from Monticello to Philadelphia, showed him how much of a "people" it was. "We hold these truths to be self-evident;" the great number of acres to be worked caused him to forget that the three or four hundred hands which tilled his little mountain belonged to the "all men" who are created. Just as the farmers of to-day get such enlarged and comprehensive views of the amount of mowers, reapers and threshers to be acquired that they forget the "inalienable rights" of wife and children "to the pursuit of happiness" and the acquisition of knowledge. And, as a woman told me a few days ago, tears springing to her eyes as she spoke: "The children have been promised schooling every year since we came to Kansas, but it was put off and now the grasshoppers have stripped us and they can't go at all."

Stripped? Yes, bad enough it is! But in many cases Kansas people have not and do not make the education of their children first as their ancestors east did. Making money, not making a living, is the aim, and "when we are rich the boys and girls shall go to college." This is a mistake. Education is money, is power. What are your children without it? *

College Lands Taxable. When?

MANHATTAN, Kas., Oct. 14th, 1875.

EDITOR INDUSTRIALIST:—My experience in the matter of advertising in your columns leads me to believe that what I wish to present will reach the people most interested by means of the INDUSTRIALIST. I therefore ask you for space to present the subject suggested by the caption of this article.

The following, No. 365 of the Supreme Court syllabi, was published in the Topeka Commonwealth a few weeks since, to wit:

STATE OF KANSAS, } ss.
SUPREME COURT.

Mathias Oswalt vs. J. R. Hallowell, Treasurer of Washington County.

Error from Washington County.

AFFIRMED.

By the Court. Valentine, J.
On December 6, 1867, the plaintiff purchased from the State, through its proper agents a quarter section of the ninety thousand acres of Agricultural College lands. The purchase money was to be paid "in eight equal annual installments, with ten per centum interest on each installment, payable annually, the first installment to be paid at the date of purchase," and the last installment to be paid December 6, 1874. Plaintiff paid the first installment at the date of the purchase, and probably paid the other installments as they became due, though this

is not shown. When plaintiff purchased said land, he received only a bond for a deed, and gave his promissory notes for the balance of the purchase money. Plaintiff has never received a patent from the State for said land. In 1873 said land was assessed for taxation, and taxes were levied upon the same. Held, that as section 1 of the tax law (Gen. Stat., 1,019) provides that "all property in this State, real and personal, not expressly exempted therefrom, shall be subject to taxation," and as no provision of the constitution or statutes "expressly" or even impliedly exempts such property from taxation, the same is taxable.

All the justices concurring.

As the above decision was at variance with the hitherto received interpretation of the statute and in direct opposition to the opinion of a former Attorney-General of the State, and in conflict with the views of the Land Department of the College, which had been advertising the college lands as "not taxable until patents were issued," I addressed a letter on the second of October to Judge Brewer asking him to inform me as to the scope of the decision, whether applicable to all the college lands or only to the particular tract referred to in the decision, and calling his attention to that portion of the General Statutes which seemed to exempt the lands from taxation, viz: specifications four and five of Sec. 3, Art. 2, Chap. 107.

I take the liberty of publishing Judge Brewer's reply, though I do not think he expected me to so use it, because it states the tenor and scope of the decision so clearly:

LEAVENWORTH, Kas., Oct. 6th, 1875.

HON. L. R. ELLIOTT,

Dear Sir:—Yours of the second inst., received. The decision referred to will apply to all lands sold and partially paid for. The Constitution, Art. XI., Sec. 1, exempts all property used exclusively for State, etc., purposes. Lands sold and in the possession of an individual for farming or other private purposes are not used exclusively for State, etc., purposes. The statute you quote exempts first all moneys and credits belonging exclusively to universities, etc. This exempts the debts due the College, its moneys invested, but does not reach to lands sold. An exemption of a mortgage would not exempt the land mortgaged. It also exempts all property belonging exclusively to the State, but this property, the land, belongs partially to the individual purchaser. Over against these provisions is Sec. 1 of the tax law which declares that "all property in this State real and personal not expressly exempted therefrom shall be subject to taxation."

Yours, etc.,

DAVID J. BREWER.

The question is settled then, that hereafter all those tracts of lands sold from the grant to the State Agricultural College are subject to taxation from this year A. D. 1875; and all sales will be made hereafter with this understanding of the law.

Respectfully Yours,

L. R. ELLIOTT,

Agent K. S. A. C. Lands.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 16, 1875.

Purcell sells sorghum at forty cents per gallon.

Clothing, Hats and Caps at low prices at Purcell's.

Oct. 15.—One hundred and sixty-one students enrolled.

Prof. Platt will preach in the chapel to-morrow at 3:30 P. M.

Gents' collars, largest stock and lowest prices, at the Bazaar. 26

Just received at Purcell's Cash Store five hundred bushels plastering hair. 26

Have you seen the two dollar shoes selling at Purcell's for one dollar per pair? 26

Prof. Gale reports a profitable meeting of the Horticultural Society northwest.

The Sewing department is progressing finely, and is ready to do any and all kinds of work.

There is now a larger attendance of students at the Agricultural College than at any previous time since its organization.

We acknowledge the Herald's kind invitation to make its office "headquarters" during the Salina Fair. Sorry that we could not be present.

Until further notice the Bazaar will retail music books and sheet music at wholesale prices, and will sell pianos at \$100 less than Kansas City prices. 26

Owing to the difficulty of keeping somebody's cattle out of our fields the north gate has been closed, and only the east and west ones will be used by the public.

Lost, by Mrs. Werden, on Monday morning, the 11th inst., a plaid shawl. Any one finding said article will greatly oblige the owner by leaving it at this office.

Prof. Shelton has finished his lectures on Farm Economy to the advanced class of young ladies, and on Monday Prof. Kedzie will begin his course on Household Chemistry.

Prof. Kedzie has returned from the annual meeting of the Academy of Science, at Topeka, and reports a pleasant session. In consequence of his absence our meteorological report goes over to next week.

It is a very good plan to have a telegraph line as a part of a printing office, with as accommodating a gentleman as W. C. Stewart at the other end of it. We have received our local "ads" by lightning this week.

The following students have been enrolled since last report: Warren C. Buell, Pavilion, Wabaunsee County; Fannie Campbell, Riley County; Phebe E. Himes, Riley County; Jasper M. Howard, Riley County; Louis E. Humphrey, Milford, Davis County; Albert H. Stiles, Pavilion, Wabaunsee County; Ellen B. Shofe, Manhattan, Riley County; Samuel A. White, Palermo, Doniphan County; Wm. J. Lane, La Cygne, Linn County.

One of the most attractive rooms to visitors, in the forenoon, is the Mechanical department. Owing to the small amount appropriated by the Legislature for building, this room is neither floored nor plastered—hadn't money enough; as a consequence the benches are three feet below where they ought to be, and are temporarily placed. Every farmer, and for that matter every man, ought to be able to perform the ordinary operations with carpenters' tools. The classes reciting at these benches in either carpentry, cabinet or wagon making number as follows: First hour, 8; second hour, 8; third hour, 11; fourth hour, 6; fifth hour, 7; total, 40. In addition, five are in the class in turning, and 11 in scroll-sawing, of whom five are young ladies. The latter are on bracket work, the material for which is dressed by the boys, but the drafting and sawing are wholly done by the girls themselves. They report that the machines run as easily as the average sewing machine and easier than many of those most used.

A Wedding.

MANHATTAN, Kas., Oct. 11, 1875.

EDITOR INDUSTRIALIST:—Taking it for granted that you or your readers always want to hear of anything of importance that happens to the old students, we write to say that Miss Elsie Thorpe, who for a year or so past has been teaching school, has just accepted another situation in that line, but this time as a private instructor, having but one pupil. His name is John T. Woods, and Elsie was so well pleased with him that when, on Thursday morning, the 7th inst., at the residence of Mrs. H. V. Werden, Rev. R. Wake told her that by giving John her right hand she could change her name to Mrs. John T. Woods she did so without the least hesitation whatever, and just as though she had been expecting to for a long while.

Since it's all over we remember how much she has of late been singing:

"Away to the Woods, away! away!
Away to the Woods, away!"

Well, as her brother Ervin said in answer to a telegram informing him of the fact, "So be it; somewhat surprised,"—perhaps some of your readers will be, but nevertheless as we were there we can testify that it's all so.

Mr. Woods was formerly from Hillsdale, Mich., but came here about five years ago from Montana, where he had been mining. Locating in the north-western part of Riley county he has been sharing the fortunes of a Kansas farmer ever since, and at present is living upon and cultivating the farm of Mr. Humphrey, three and one-half miles from Milford, in this county. He also has leased a large tract of land in Clay county and has one hundred acres of it under cultivation this year.

The bride and groom spent a couple of days with friends in Topeka, returning here last Saturday afternoon. All the relatives, with Rev. R. Wake and wife, gathered at Mrs. Werden's to partake of the wedding dinner given them by Elsie's mother and Mrs. Werden. Preceding the cake, a share of which we trust they remembered you with, came turkey, vegetables, "sass," pickles, tea, coffee, etc., while thereafter apples, grapes and "sich" light refreshments were served.

Shortly after dinner and when there was a comparative lull in the conversation, Mrs. Werden was heard to exclaim, "1 2 3 4 5 6 7 8 9 10," whereupon every body left the room to the utter astonishment of the bride and groom, but 'twas only for a moment when they all filed back and deposited in the laps of the Woods family some thirty or forty different articles, useful and ornamental, which were in token of the fact that we all loved the Woods, and especially this particular portion, and as mementos and reminders in years to come. The collection comprised many articles of use beside pictures of several members of the family and others, all of which will be duly appreciated in the new home. They were completely surprised and it was difficult for Mr. Woods to find words for the neat little speech he gave us expressive of thanks and appreciation.

After music and other like entertainment the party broke up, each and all wishing the new couple all the prosperity and happiness possible.

AN OLD STUDENT.

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Millinery, Fancy & Furnishing Goods.

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Our prices are lower than any in the City for same quality of goods. 26-3m

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Is prepared to do all kinds of work in his line, Shaving, Hair Cutting, Hair Dressing, Dyeing Hair and Whiskers. Satisfaction guaranteed. Shop one door west of Zeigler's Hardware Store. 26-3m

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Fine Stationery, Envelopes, Pocket-Books, Gold Pens, Blank Books, etc. 24-3m

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OF THE

Kansas State Agricultural College.

Organized, Oct. 12th, 1868; chartered, Jan. 1871.

Motto: "Labor Omnia Vincit."

Meets Saturday evening each week.

M. F. LEASURE, President.
J. F. LATOURRETTE, Sec'y.

Dr. Patee, 11-20

ALPHA BETA

Literary Society

OF THE

Kas. State Agricultural College.

Organized, Oct. 17, 1868. Chartered, Dec. 26, 1870.

The society holds its sessions in the college building every Friday afternoon at two o'clock.

A. A. Stewart, Sec'y. F. B. QUINBY, Pres.

E. B. Purcell, Banker. Jno. W. Webb, Cashier.
Geo. S. Green, Attorney.

MANHATTAN BANK,

MANHATTAN, KANSAS.

A General Banking Business Transacted.

Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission. 17

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STANDARD PRICES,
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Orders from counties and townships so-
 licited. All sorts of Books made, bound
 and re-bound. Legal Blanks, Seals, Sta-
 tionery and Job Printing.

THE
COLLEGE FARM
 Keeps constantly on hand and for sale, specimens of
SHORTHORN, LANCASHIRE,
JERSEY, BERKSHIRE,
AND
ESSEX SWINE. DEVON CATTLE.

We offer for sale three fine yearling bull calves, as
 follows:

One Short-horn bull, red; got by Minister 6363, out
 of Grace Young 5th. Price, \$200. Grace Young 5th
 sold for \$1,080 in 1873.

One Jersey bull, fawn and white; got by Glenco
 404, out of Duchess 848. Price, \$100.

One Devon bull, imported from Canada. Price,
 \$100.

These prices will place this stock within the
 reach of Kansas farmers and stock men.

Address, **E. M. SHELTON, Sup't Farm.**

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 Keeping; and in Industrial Draw-
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 is well furnished with all the facilities for a speedy
 mastery of the art of Printing, and is in charge of a
 practical printer.

Besides regular class instruction in printing, the
 weekly publication of the Industrialist by the De-
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 drill in newspaper work.

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FLOWER AND LANDSCAPE
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Kansas Forest Culture a specialty.

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 of chemical apparatus and reagents west of the
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 lege are located in Riley, Clay, Dickinson, Marshall
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 lands in the market. Prices from \$5.50 to \$10.00
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Terms of Purchase:—One-eighth cash
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 portion of the whole amount may be paid in cash at
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L. R. ELLIOTT,

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 Special course of lectures, by Prof. Kedzie,
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Tracing the development of the root, stem,
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The Department is well equipped with
 tools and machines for the student's use.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 23, 1875.

J. A. ANDERSON,
Managing Editor.

J. H. FOLKS,
Business Manager.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

English Language for American Science.

The sole object of any language is to convey and preserve ideas. Words serve merely as cups that contain specific meanings. Hence the value of a language depends on two things, first, that the person speaking, and, second, that the person hearing, shall both understand the precise signification of the words used. If either party fails to do this, the language has failed to serve its purpose. A physician may fully understand the meanings of certain technical terms which describe a disease, but when he uses these terms in talking to a person who does not understand them he might as well keep his mouth shut. The terms may be good enough in themselves, and his knowledge of their signification may be perfect, but it is absurd to employ them as a language simply because the person addressed does not know their meaning. Hence it is evident that when men really want to convey ideas they must, from necessity, use words understood by both parties; and that the general value of a language to a given people will depend upon the number of persons who understand it. For this reason the German language is worth more to the Germans than is the French tongue; and the English language, for the same reason, is worth more to Americans than either French, Latin or Greek. Any man who talks English can travel comfortably in the United States, so far as understanding others or being understood by others is concerned; whereas the best foreign linguist, though he could spurt out as many different languages as a soda fountain can sirups, would find it difficult to order a railroad dinner or to negotiate for a box of paper collars.

This may be all wrong, as a matter of equity. It may be that every American ought to use any or every other language than his own. But it is nevertheless an actual fact. Americans do speak English, and there is no general desire to exchange it for any modern much less any ancient tongue. Somehow there is a national feeling, closely akin to patriotism, that this nation is big enough, strong enough and brainy enough to have a language of its own. The average American has a rollicking notion that English is good enough for him, and, therefore, more than good enough for the rest of mankind; that if the world wants the latest news and best thoughts it will save itself bother by adopting the English as the world's language; that the tongue which Shakspeare, the translators of

the Bible, Milton, Webster, Farraday and Agassiz found sufficient for their purposes is sufficient for any purpose; or, if it is not, that, as our language isn't yet fenced in, it can be made to convey any idea worth conveying or preserving. However deplorable, from a scientific standpoint, this national notion may be, it is quite as general and forceful as is the nation's love for its form of government; and not until congressional speeches are delivered in Latin, or legislative statutes are published in Greek, will the American people exchange their daily tongue for that of any empire, living or dead.

Such being the fact, the question is pertinent whether Americans may not fairly demand that American science, at least so far as it is taught in the common schools, or designed to be used by the masses, shall be expressed in English instead of in Latin or Greek terms. These schools are maintained by the American public for the education of the future American citizen, and it seems decent, as well as just, that any science which possesses enough practical value to the people to award it a place in the people's schools shall be taught in the people's tongue.

If it be affirmed that since the scientists of the world use the Latin terms, our scientists cannot communicate with them except we teach the same terms, then we ask which is the most important to us as a nation, on the one hand, that the masses of our people shall become familiar with the practical truths of natural science, or, on the other hand, that one pupil in ten thousand shall be so taught the Latinized science that he may expertly use it? And again, even supposing that the latter result is the more desirable, we ask whether the common school is the proper place to teach this Latinized lingo to the virtual exclusion of every-day English? It may be well enough, after that knowledge which is really useful to the ninety-seven industrial pupils has been imparted, to teach the scientific jargon; but, as things now are, the very language in which science is phrased virtually and effectively walls up its facts from the masses. So that the whole thing narrows itself down to this: Because a small circle of scientists, and when compared with the masses a very small circle indeed, choose to sputter Latin and Greek at each other, in talking about plants and animals, shall the children in the public schools not be informed on these subjects in a language which they already understand? At present the price paid for a knowledge of these things is the acquisition of two dead languages, and it is about time that somebody knocked that pedantic monopoly in the head by giving us text-books that employ English instead of Latin and Greek terms.

THE State Sabbath School Association meets this year at Fort Scott, Oct. 26-28; and, both because of the interest of the subject considered and of the town in which the meeting is to be held, there ought to be a large attendance. For further information, address H. Clarkson, Sec'y, Topeka.

Plenty of hay all over the State.

Prof. Tice predicts a mild winter.

Great Bend wants a steam flouring mill.

Peaches have been successfully shipped to England.

Wood seven dollars a cord at Independence. "Ager."

The largest corn field in Vermont contains five acres.

Two hundred and fifty bushels of onions to the acre in Lyon county.

Chetopa reports plumbago at a depth of eighty feet in the coal bore.

The Secretaryship of the Interior has been tendered to ex-Senator Chandler.

The population of Wichita is 2,754; Parsons, 5,120; Independence, 2,056.

Wilder's Annals of Kansas will be a book of 550 pages, 375 of which are printed.

Ten bushels of wheat and one hundred of corn to each inhabitant in Pawnee county.

A castor bean society in Franklin county has sold to one firm 35,000 bushels of castor beans, at \$1.15 per bushel.

WEBSTER SOCIETY

OF THE

Kansas State Agricultural College.

Organized, Oct. 12th, 1868; chartered, Jan. 1871.

MOTTO: "Labor Omnia Vincit."

Meets Saturday evening each week.

M. F. LEASURE, President.

J. F. LA TOURETTE, Sec'y.

Dr. Patee. 11-20

ALPHA BETA

Literary Society

OF THE

Kas. State Agricultural College.

Organized, Oct. 17, 1868. Chartered, Dec. 26, 1870.

The society holds its sessions in the college building every Friday afternoon at two o'clock.

F. B. QUINBY, Pres.

A. A. Stewart, Sec'y.

E. B. Purcell, Banker.

Jno. W. Webb, Cashier.

Geo. S. Green, Attorney.

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INJURIOUS INSECTS.

Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

THE INDUSTRIALIST.

SATURDAY, OCTOBER 23, 1875.

Meteorology.

For the week ending Oct. 20, 1875. Condensed by Prof. Kedzie, for the Industrialist, from the records of the Chemical Department:

DAY OF WEEK.	Thermometer.			Bar.	Rainfall in in's.
	Max.	Min.	Me'n	M'n H't.	
Thursday.....	62°	32°	52° 1/3	28.78	
Friday.....	60	33	47	28.85	
Saturday.....	72	36	55	28.74	
Sunday.....	70	39	58 2/3	28.98	
Monday.....	58	31	43 2/3	29.14	
Tuesday.....	70	41	56 2/3	28.92	
Wednesday.....	78	47	61 2/3	28.86	

Average temperature for the week, 53° 57.

Range of " " " 49°.

Average barometer " " 28.88.

Per cent of cloudiness " " 21.

Purcell sells sorghum at forty cents per gallon. Clothing, Hats and Caps at low prices at Purcell's. Gents' collars, largest stock and lowest prices, at the Bazaar. 26

Ladies, have you seen those five dollar blankets at Purcell's. 27

Prof. Platt will conduct the services at the chapel Sunday 3:30 P. M.

Just received at Purcell's Cash Store five hundred bushels plastering hair. 26

Have you seen the two dollar shoes selling at Purcell's for one dollar per pair? 26

Until further notice the Bazaar will retail music books and sheet music at wholesale prices, and will sell pianos at \$100 less than Kansas City prices. 26

A young lady, well recommended, desires to work for her board in some family residing near the College, that she may attend it. For further information inquire at this office of an acquaintance of the young lady.

Two hundred years ago, when we were a boy, foot-ball naturally took the place of base-ball, as the weather grew colder. Wonder why it doesn't now, and why our boys don't warm up their blood and shins by trying it?

The Farm Department has lately made the following sales of live stock: Prince Rupert, 20707 A. H. B., to Senator Harvey, Vinton, Kansas; price, \$175. Berkshire sow, to Gov. N. Green, Stockdale, Kansas; price, \$20. To L. N. Holmbyrg, Lindsburg, Kansas, pair of Berkshires; price, \$20.

Prof. Platt's vocal music classes are full to overflowing, and they more than fill the chapel with flowing music. The Professor is a splendid drill master as well as musician; one of the natural sort, who sings because he can't help it, and won't let others sing like hand-saws if he can help it.

At the meeting of the Alpha Beta Society last Friday afternoon the question "Is country life preferable to city life," was discussed. The pleasures of country life were detailed to the members in an admirable manner, while the sights to be seen, the knowledge to be gained, and the more elevated state of society, were arguments produced in favor of city life. Decision in favor of negative. A greater number of members were present than usual, consequently the meeting was an interesting one.

The Websters met last Saturday night in the telegraph hall. This proves a pleasant place of meeting. The full attendance and the deep interest taken in all the proceedings made the meeting both pleasant and profitable. After initiation of candidates and debate came extemporaneous speaking. Under this order all took part on various topics. An amusing essay was then read by Mr. Malls. Messrs. Boles, Lewis, D. Hodges, F. W. Wood and Arlie Wood were received as members. A committee was appointed to arrange for obtaining pictures with which to adorn the room, and to find cost of a suitable chandelier and lamps. After adjournment books from the society library were distributed among the members.

The Sewing Department.

We don't hear so much respecting the impossibility of teaching trades in a college, as we did a couple of years ago. And for at least six months we haven't seen any body's nose twitched aloft at the unaristocratically of such teaching. The hair-parted-in-the-middle Charles Augustuses have not been around as numerously as in days of yore. And the sensible people who visit the industrial departments see so many undeniable evidences that the trades can be and are being successfully taught, that they don't stop to debate the abstract proposition.

Of all those especially valuable to a woman there is no one in which greater interest is taken by the pupils or greater tact and ability are shown by the instructor, than that of dress-making and millinery. Mrs. Cripps not only herself thoroughly understands the business, but she is apt and effective in teaching others just what to do and what not to do. And any body who fancies that girls need no instruction in the use of the needle and scissors, as a great many bodies do laughingly fancy, can very speedily have that error corrected by spending a few days in the sewing department. In the glorious ignorance and credulity characteristic of men respecting these things, we used to suppose that when bright young ladies said they knew how to make a dress, that they did; but after noticing several who couldn't sew a plain seam by hand, except on the rail fence pattern, our credulity began to give way to doubt, and doubt to disbelief. At present we believe that the average American girl as much needs instruction in sewing and cutting as the average American boy does in spelling and penmanship. It often happens that mothers who are themselves deft workers with the needle fail to give any instruction to their daughters just because they would rather do the work themselves than "have it spoiled." Ditto, in the matter of cutting a dress. And it more frequently happens that the mother is not competent to teach the girl properly. There is just as much carelessness and slouching in sewing as there is in house-keeping, and every body knows that there is a deal of the latter.

It is very easy to decide whether a girl will derive benefit by entering the sewing department. If she can do all that is there taught, her time can be better spent elsewhere; if she cannot, it cannot; and an hour's examination will settle the question. One thing is certain: That every girl will find use in after life for just the knowledge and skill offered by this department. Many a weary hour will be saved by acquiring the taste and expertness there imparted. As a rule the girl who at eighteen practices on the piano an hour a day cannot at twenty-eight play twenty pieces, and at thirty-eight can't play one. But so far as our observation goes, women use the needle more at thirty than at twenty years of age, and still more at forty than at thirty. Perhaps there are natural reasons for the fact, but at any rate it is the fact. And for the life of us we can't see why girls should not act accordingly in taking an "education."

There is another thing which we can't see, and the more it is thought about the harder it is to see it: Why should not this department take in sewing, charge for it, and give the proceeds to those who do the work? Some of the best students in the College are educating themselves by daily work. If they hire out to do cooking nobody objects that "our trade is being interfered with." Why hasn't the same girl, precisely the same right to hire out her needle without the charge of interference? If the College were thus seeking to make money for its own purposes it would be different, but it isn't; it is only asking that such girls shall have a fair chance to fairly earn a livelihood. No one could question the girl's right to do this if she appeared in the market as a seamstress, and how she loses her right by entering College, or in any way violates it, is beyond comprehension. If any of our readers wish sewing done, bring it along. If it is not satisfactorily done, pay in proportion. If it is well done, pay full price.

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Regular Instruction and Practice in the science and art of Vocal Music, without charge.

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Complete Course in Harmony.

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East end Poyntz Avenue,

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Millinery, Fancy & Furnishing Goods.

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Our prices are lower than any in the City for same quality of goods. 26-3m

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S. M. FOX,

BOOKSELLER & STATIONER.

Dealer in Fine Stationery, Envelopes, Pocket-Books, Gold Pens, Blank Books, etc. 24-3m

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[Concluded from first page.]

braska bluff, to the heat generated by this rapid oxidation produced by increased exposure to air and the water of the river and rains, there is added the violent avidity with which the free sulphuric acid attacks the carbonates of lime and magnesium, the effect is naturally powerful and startling in the extreme.

Under these encouraging conditions many interesting chemical compounds are here in the process of formation. By the decomposition of the carbonate of calcium by the Sulphuric acid, magnificent crystals of Selenite (Gypsum) are now forming in immense abundance. The crystals are exceedingly perfect and beautiful; many of them somewhat rare in form, long, slender, needle shaped crystals, but still perfect rhomboidal prisms with bevelled edges. In some instances in the solid mass of the bluff itself, where the layers of the limestone and the acidified shale are conjoined, there are formed seams of a half inch or more in thickness completely filled with interradiating crystals of Selenite partially coated with the yellow hydrated oxide of iron. By the decomposition of the magnesium carbonate there is here formed Magnesium Sulphate or Epsom salts distributed over the rock in a very minute incrustation of efflorescent crystals.

Finally by the slow decomposition of the argillaceous or clayey portions of the rock itself there is produced the Sulphate of Aluminum in minute crystalline tufts called on account of its form "Feather Alum." These last two compounds suggest an economical phase of what has thus far been simply an exceedingly interesting chemical phenomenon. It is well known that the great proportion of the common alums are manufactured from shales almost identical in nature to those which form the black seams of this Nebraska bluff. In the great English alum fields, for example, the shale full of partially decomposed pyrites is collected, piled in oblong heaps, and slowly fired to completely carry out the oxidation which has been begun. A large quantity of free sulphuric acid is thus produced which attacks the shale forming Aluminum Sulphate. This is removed by leaching with water and the addition of some available form of potash or ammonia is all that is needed to crystallize out the common potash or ammonia alums of commerce. Now in the case of this Nebraska bluff, this oblong mass of heated debris bears no very distant resemblance to a "curing heap" of an alum manufacturer. The presence of the limestone is to be sure most unfortunate and would necessarily be avoided if the acidified shale was to be handled with a view to profit. The small quantity of the magnesium carbonate present would be by no means unpropitious as the manufacture of Epsom salts and the alums is frequently carried on together at a handsome profit. If the accounts of intelligent observers are to be accepted, there would seem to be little doubt that this region may prove available in these branches of manufacture. But whether thus utilized or not, this display is surely a most fascinating one to the chemist and mineralogist,—nature seeming in some degree to have pulled aside the curtain and given us a peep behind the scenes, where we are permitted to see her in the very act of forging these marvels of crystalline creation.

The Iowa corn crop is estimated at 130,000,000 bushels.

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Simple Tillage,
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Our Pianos and Organs are recommended by the Profession generally to be the best that American skill has yet produced, and we guarantee that the prices will be as low as any one can possibly ask. We are now selling full seven-octave Pianos for \$275, cash. Correspondence solicited, and catalogues mailed. 25

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Tuition Absolutely Free!

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Instruction and Drill in
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Kansas Forest Culture a specialty.

Seventy acres devoted to experimental apple, pear and peach Orchards, Vineyards, Nursery, and Gardens.

Special for Woman.

Physiology and Special Hygiene.

Special Lectures on

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By Prof. Shelton—the Dairy, Poultry etc.

GARDENING,
By Prof. Gale—vegetable, flower, commercial and ornamental.

HOUSEHOLD CHEMISTRY,
By Prof. Kedzie—the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc.

ENGLISH LANGUAGE.

The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive.

DRILL IN ENGLISH,
HISTORY OF ENGLISH,
STRUCTURE OF ENGLISH,
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Constant practice in the class room, and, if desired, at the printer's cases.

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Practical, direct and thorough drill in
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Industrial Drawing,
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Geometry,

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